Croonian Lectures

ON THE

RÔLE OF FATS IN VITAL PHENOMENA.

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LECTURE III.*

MYELIN FORMS OF LECITHINE.

THERE is a phenomenon that was described three-quarters of a century ago by Virchow, known to all of us at least from description, and generally referred to as the myelin forms which are exhibited by lecithine and mixtures in which lecithine is present. This phenomenon has been but little studied in recent years, and now that physical chemistry is contributing so much to our understanding of unhomogeneous systems and the colloidal state, it is timely that attention should be turned to it again. It is more than likely that the result will be to throw new light on the physiological importance of fats. It is so long since great expectations were aroused by the recognition of the wide distribution of lecithine in the composition of all forms of life, and so long that their realisation has been waited for in vain, that they are seldom even referred to now. But since through the work of McLean, of Parnas, and of Levene, material of greater purity is comparatively easy to obtain, a revival of interest is to be expected.

I have for many years been in the habit of making with students crude preparations of lecithine from yolk of egg or the brain, a streak of which on a glass slide under a drop of water showed the outgrowth of buds that develop into twisting cylindrical forms like the mycelium of a fungus. But lately with purer preparations, and especially with that given me by Dr. Levene, I have observed these outgrowths more systematically, taking photographs of their appearance after different intervals of time, and using various solutions as well as distilled water. And in order to obtain records that can be compared with each other I have especially made use of photographs taken every half-minute over a period of two hours on kinema film ribbons, which when developed can be projected at a convenient rate, about 10–15 a second. A cavity slide is used, and a minute streak of the waxy material is put in the centre of the cavity, so as to show a well-defined edge under a 2-inch objective. The first photograph of this edge is now taken; then two or three drops of water or some solution are put on so as to fill the depression in the slide, a cover-glass put on, and as quickly as possible, generally about 1½ minutes after contact with the liquid, the series of photographs is started. The magnification used on the film is about 40. On projecting the film an idea is obtained of the nature and activity of the process which is set up on contact with the solution that is very much more reliable and distinct than that which is given by direct observations through the microscope extending in each case over hours.

For showing at these lectures a number of such films was prepared; for presentation in print, from some of these films the first photograph and five at intervals later, the same intervals in each, are reproduced in a group of six from each of the selected films. This is a far less satisfactory way of presenting the changes that develop in the time, but still gives some idea of what the film shows. The six photographs in each group are arranged in order, the first three on the left with the first at the top of the column, and the fourth at the top of the right-hand column.

The first photograph in each group shows the edge of the film before it was moistened; the second the same edge 2½ minutes after being moistened, the third 9 minutes, the fourth 17, the fifth 33, and the sixth 57 minutes. No photograph is reproduced in this series from those taken in the second hour, except two in Fig. 2, to which reference will be made below. In some cases the solution applied set up changes which caused the edge of the streak to move right across the field; when that occurred the slide was moved so as to bring it back to a position that would allow it to be observed for longer.

The series of photographs in Fig. 1 is fairly typical of what occurs when distilled water, recently boiled and cooled, is put on. No intentional movement of the slide was necessary. But it looks as if some slight unintentional movement had occurred between the taking of the fourth and the fifth picture, on referring to the film about 20 minutes from the beginning of the experiment. At the time when this film was taken it had not been discovered that some vibration was transmitted to the concrete floor where the microscope and camera were set up when a motor was running in another room a little distance away. The later films were taken only when the motor was not in use. But the error introduced in this case is not material for the purpose, and from experience in many similar experiments with simple water may safely be said to be only slight. The character of the protruding outgrowths, the rate at which they appear, and even allowing for the probability of a slight movement of the slide, the rate at which the edge advances across the field is typical for pure water, when compared with the rates observed with some of the solutions to be referred to later.

Fig. 2 shows the effect of putting on dilute ammonia (N/100) instead of distilled water. The second picture, only 2½ minutes after the ammonia was put on, shows that the budding protrusions had reached a distance 8 mm. (= 0·2 mm. unmagnified) from the original position. It had advanced to the edge of the field in 22 minutes, 5 minutes after the fourth picture, in absolute measurement about 0·5 mm. In the course of two hours, during which the slide was moved three times to keep the edge in view, the total advance was about 1·2 mm.; the fifth and sixth pictures in this figure were taken later than in the case of the other figures, 15 minutes apart near the end of the second hour. They show swollen bubble-like formations at this stage and the curious concentric wrinkles in the surface which are very common with some solutions. No photographs are reproduced from the films taken with sodium and potassium hydrates in the same concentration as the ammonia, N/100. They show similar forms, similar markings on the surface of the globular outgrowths, and similar (though not quite so rapid) rates of growth and movement, to those shown by the action of ammonia.

Fig. 3 shows an effect very different from those given by these three bases, when lime-water is used in the same strength. The edge of the preparation remains perfectly sharply defined throughout the experiment, and in fact for as long as it is observed; there is no indication of buds or protrusions. There is a zone at the edge more transparent than the centre, which to the naked eye looks chalky and opaque. But all the free budding outgrowth of myelin forms is stopped.

The natural suggestion occurs here that this difference between the action of calcium hydrate and the hydrates of ammonium, potassium, and sodium would be shown too if baryta were substituted for lime-water. But the film taken with baryta water, N/100, from which the photographs in Fig. 4 are reproduced, shows that baryta does not give the same result; the edge of the lecithine streak advances and is broken up by the formation and detachment of globular masses. It looks, therefore, as if the action of calcium was something peculiar to this ion and

* Lectures I. and II. appeared in THE LANCET of April 18th and 25th respectively. Lecture IV. will appear in a subsequent issue.

not shared in common with other dibasic cations. (Cf. too Fig. 16 below.)

Figs. 5, 6 and 7 are from films taken to show the effect of acids, hydrochloric, sulphuric, and acetic, each in N/100 strength. They resemble one another in the freedom and rapidity with which cylindrical outgrowths are formed, though Fig. 5, where the acid was hydrochloric, shows this difference as compared with the action of water alone in much the most marked degree. The region of contact with the acid in this case when the film is projected shows the most astonishing liveliness; the writhing movements of the coiled cylindrical processes can perhaps be imagined even from the isolated photographs. The slide had to be moved twice in the first hour and the advancing edge was even so off the field from the thirty-first to the sixty-fifth photograph, for 17 minutes, that is to say; having travelled at one point 0·5 mm., 20 mm. in the photograph, in 16 minutes. The fact that the action of sulphuric acid, though generally similar, has never been seen to produce such activity as hydrochloric acid suggests that, since the hydrogen ion was present in about the same concentration in these two cases, the effect is in part due to the properties of the anion as well. Acetic acid produces a less vigorous action than the other two acids.

The three next figures, Nos. 8, 9, and 10, are from films taken to show the influence of concentrated solutions of the salts ammonium sulphate, sodium chloride, and calcium chloride. The solutions which were saturated in each case were brought to a neutral reaction (pH 6·6 in the case of the first and last, 7·1 in the case of the sodium chloride). This series was suggested by the way in which the lecithine streak in some of the solutions grew and spread out. Without for the moment discussing the nature of the whole phenomenon, it seemed clear that it must involve the incorporation of water in the lecithine; and it was of interest to see how far this was interfered with by a high osmotic pressure in the fluid. It may appear surprising that neither the swelling of the mass nor the outgrowth of buds and protrusions from the surface was entirely stopped either by saturated ammonium sulphate or by saturated sodium chloride solution. The budding from the surface is with both solutions distinct in the first ten minutes, though it proceeds slowly afterwards; and the same may be said with regard to the swelling. It is almost inconceivable that this involves the extraction of water from solutions of such concentration, and yet it is not easy to suppose that in the process of imbibition other molecules are as readily taken up as those of water. Clearly they are not taken up as readily;

FIG. 1.

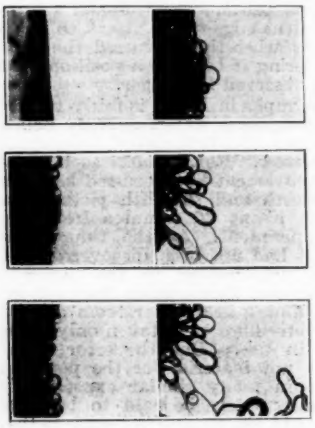


FIG. 2.

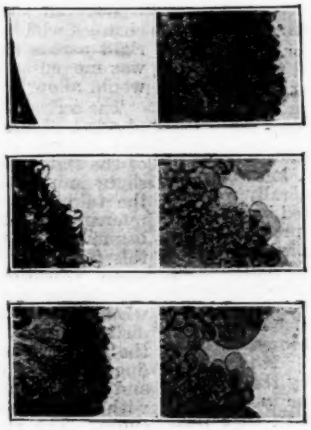


FIG. 3.

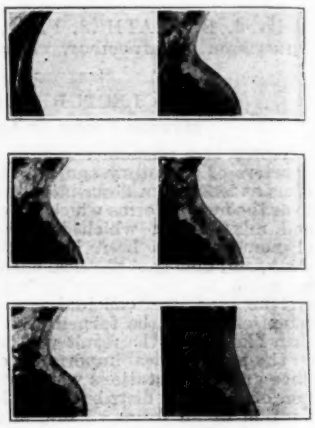


FIG. 4.

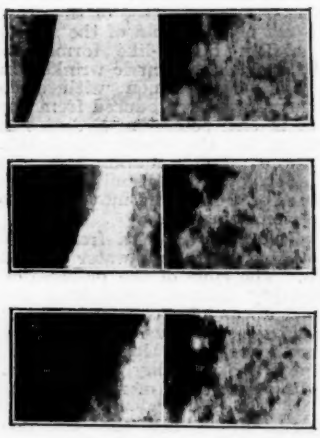


FIG. 5.

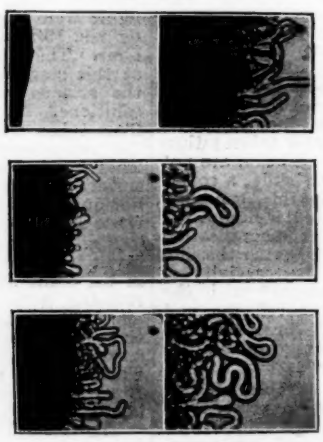
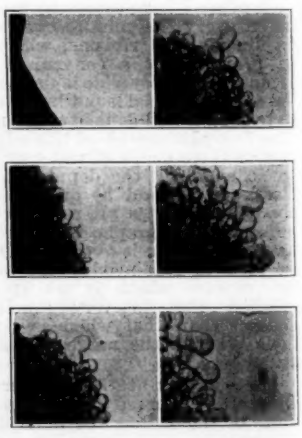


FIG. 6.



the question is whether they are taken up at all, and at any rate at first sight it appears as if they must be; but whether their presence does anything more than embarrass the action of the water, and whether such effect as is produced is produced by the water in spite of its companions it is at present impossible to say.

In Fig. 11 the fluid put on the slide was egg white filtered and diluted with about four volumes of a sodium phosphate solution so as to contain about 2½ per cent. of albumin and have a neutral reaction (pH 7·2). The fact that the phosphate solution allows the budding process to go on freely and unhindered

FIG. 7.

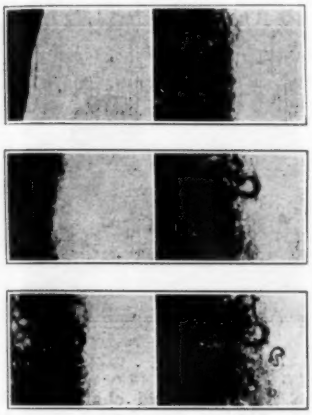


FIG. 8.

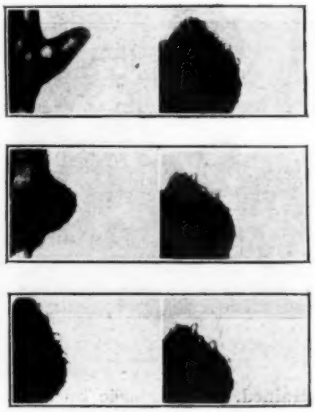
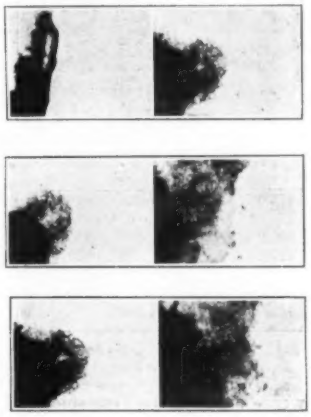


FIG. 9.



But one thing is obvious: in Fig. 10 the action of calcium chloride in high concentration is very different from that of the other salts to which reference has been made. There is no budding of myelin forms: a semi-transparent border appears at the edge of the lecithine after nearly half an hour, and apart from this there is hardly any indication of swelling. It looks as if something was freezing up the action that otherwise so constantly occurs between lecithine and water with which it is in contact, much as is the case with calcium hydrate, as shown in Fig. 3.

Two other groups of photographs are shown in Figs. 11 and 12, which are meant to lead to another

can be seen from the final result, after a much longer period for action it is true, which is shown in Fig. 17 below. So it is clear that the fact that the budding process is very much restrained by the solution here used must be ascribed to the egg white which it contained and not to the phosphate. In comparison with water alone (Fig. 1) the myelin forms are here very modest though not entirely suppressed. The solid film of egg-albumin which Ramsden has shown to be formed at the surface of its solutions appears to be formed at the surface in contact with the lecithine and to restrain the profuse growth of myelin buds without altogether arresting their formation

FIG. 10.

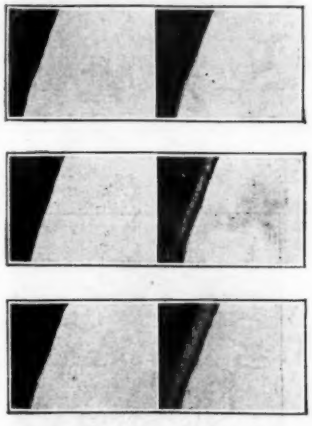


FIG. 11.

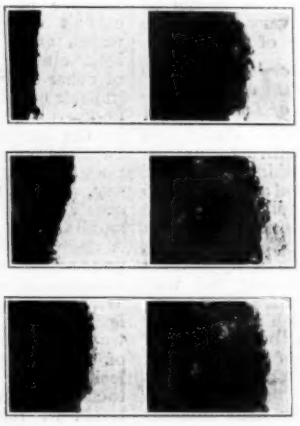
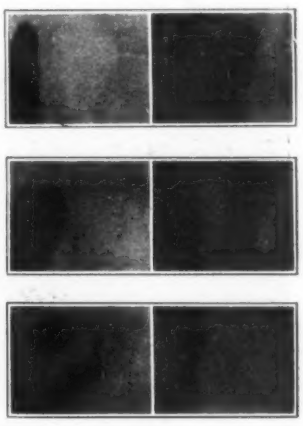


FIG. 12.



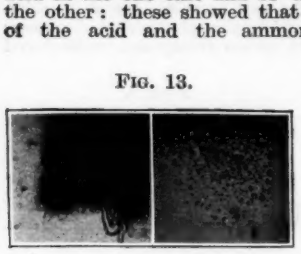
line of thought. That lecithine is insoluble in water is proved by the fact that it gives a permanent monomolecular film on water and dilute acids. There must be an interface, therefore, where water and lecithine meet, and substances which concentrate at the water surface may be expected to appear at this interface: it is of interest to see what is the effect on the behaviour of lecithine when this happens.

in spite of its solidity. It is certainly permeable to water in any case: just as the skin on heated milk formed in the first instance in the same way thickens and becomes conspicuous only when evaporation through it causes it to thicken. The lecithine swells and takes up water through the albumin film very noticeably. Two other films were prepared, photographs from which are not here reproduced, in which

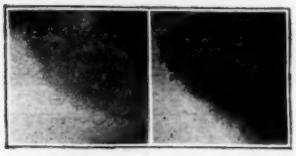
solutions containing the same concentration of egg white, but in addition a slight excess of hydrochloric acid in the one case and of ammonium hydrate in the other: these showed that the exuberant action of the acid and the ammonia (Figs. 5 and 2) were still more conspicuously restrained. They serve therefore to confirm the account given here of the action of egg white in repressing but not altogether arresting the phenomenon that we are studying.

In Fig. 12 are six photographs taken at the same intervals of time as those in the earlier figures though not selected from a continuous series of 240 that go to each of the kinema films. They are, however, comparable with those as they are presented here. The solution here was one of saponin in water (1 in 2000; pH about 4). The effect of the film of saponin concentrated at the interface seems to be very similar to that of egg white.

FIG. 13.



Water. Ammonia.



Potash. Soda.

FIG. 14.

FIG. 15.

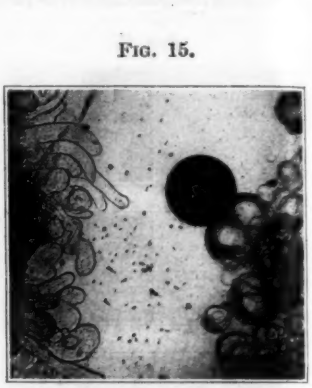
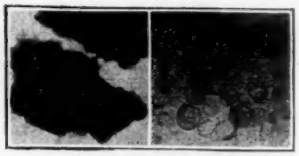
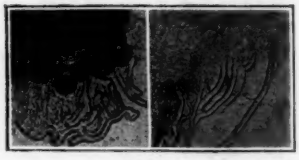


FIG. 16.



Lime water.

Strontia.



Baryta.

Theory of Formation of Myelin Forms of Lecithine.

The study of myelin forms in lecithine which I have attempted to sketch in with the help of the kinema projector rests upon a hypothesis regarding the way in which they arise, which may or may not be capable of proof but is this. Lecithine is a fat containing two fatty acid radicals instead of three, one of them certainly unsaturated, the other probably saturated; in place of the third there is phosphoric acid condensed by one of its hydroxyl groups with the glycerol and by a second with a basic alcohol choline, the third hydroxyl group being free. And it behaves when spread in a monomolecular film on water as a fat, at any rate as a fat containing unsaturated acid radicals. The artificially saturated derivative, hydrolecithine, behaves as a saturated fat except that the substitution for the third fatty acid chain, with its paraffin properties, of the group containing phosphoric acid and choline, with affinities for water in both the free acid hydroxyl group and the free basic one, causes the two fatty acid chains to be assigned an area in the film nearly as great as that taken up by the three in tripalmitin: the very high pressure necessary in order to reduce this area shows that the group consisting of glyceryl cholyl phosphoric acid is not readily distorted so as to allow close packing of the fatty acid chains.

But though lecithine is a fat and in a film behaves as one, lecithine in bulk behaves very differently from a fat or oil in contact with water. The "surface-tension" of oil against water is such that the number of molecules of either which are allowed by the attractions of other molecules in their neighbourhood to remain in the surface is kept as small as possible, that is to say, the surface area is kept as small as possible. A drop of oil suspended in water remains spherical. With lecithine it is just the other way. The number of molecules of lecithine in contact with water tends to increase and to become as large as possible; that is why the surface is protruded into the water and the myelin forms appear. The attraction exerted by water on that part of the molecule of lecithine by which it differs from a simple fat is so great, that the molecule is drawn to and held by the water more strongly than it is by the other lecithine molecules in its

FIG. 17.

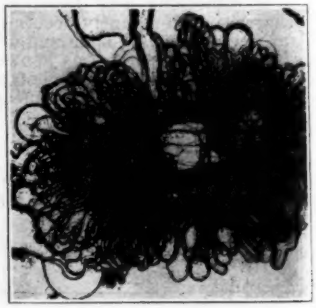


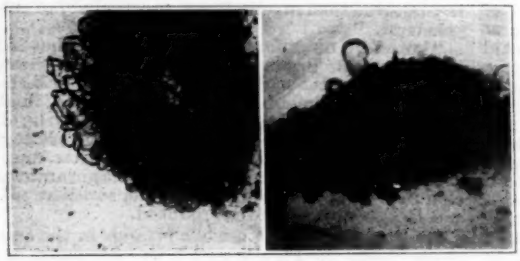
FIG. 18.

neighbourhood. This attraction prevails over the attractive forces between the paraffin chains, partly because these cannot be packed so close as in a triglyceride. The cohesion between the lecithine molecules is consequently weakened at a water surface, and the surface tends to grow and not to be kept small: if the term surface-tension must be used, the surface-tension is negative.

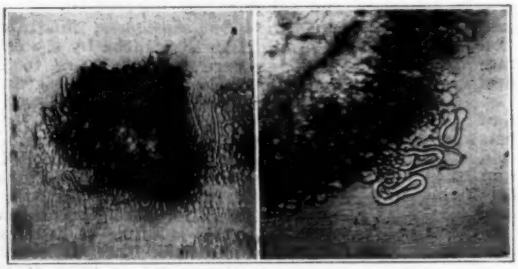
The conception seems to imply that the attraction of water for the polar group composed of glyceryl cholyl phosphoric acid can make itself felt beyond the first rank of molecules which consists of those actually in contact with the water. According to some the fatty acid chains which can be brought closer together are far stronger than those between these chains in lecithine in which they are kept further apart by the large polar group to which they are attached. But however we are to picture it, the number of lecithine molecules in contact with the water tends to grow rapidly and so the myelin forms arise.

It must be pointed out that hydrolecithine shows no such activity at a water surface, not even when observed on a hot stage heated to 65° C. or more. So that the unsaturated acid chain in lecithine must be retained in order that the phenomenon may be

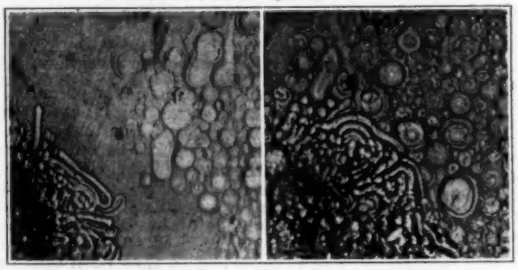
FIG. 19.



No. 1. Serum, 24 hrs. No. 4. Gelatin, 24 hrs.



No. 2. Hæmoglobin, 1 hr. No. 5. Hæmoglobin, 18 hrs.



No. 3. Hæmoglobin, 40 hrs. No. 6. Hæmoglobin, 90 hrs.

FIG. 20.

FIG. 21.

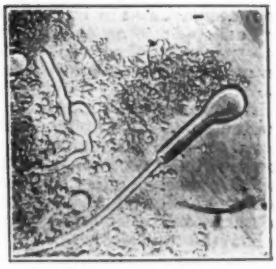
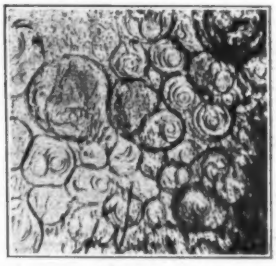


FIG. 22.



range of molecular attractions is too small for this to be possible. In that case it becomes necessary to suppose that kinetic activity must bring molecules temporarily within range of the action of the water in numbers greater than the average number allowed to remain in the surface; and once within the range such molecules are not then able to escape. It should be remembered, too, that in a monomolecular film of lecithine on water the film is expanded and the molecules are not in close contact with each other. Unsaturated fatty acids and oils also give expanded films, but then in them, in the first place, the simple glyceryl radical is not so strongly bound to the water, and in the second place, the cohesive forces between observed. It is this chain, too, that causes lecithine to give an expanded film, while hydrolecithine gives one that is condensed. And yet the presence of the unsaturated paraffin chain is not by itself sufficient to account for the growth of the surface, since oleic acid and olive oil, which give expanded films, do not give myelin forms.

But while the lecithine molecules are pushing out into the water, water molecules are being drawn in among the lecithine. It seems necessary to suppose this because of the growth of the lecithine in volume, because of appearances that suggest alignment of molecules in the lecithine, not only at the external surface but also beneath it within the myelin forms;

and, indeed, the attraction of water and lecithine being reciprocal and the paraffin chains not as close to one another as in a simple glyceride, it seems to follow that water molecules driven by kinetic activity between the lecithine molecules will be detained by their affinity for the group that draws them. Part of the phenomenon then appears to be of the nature of imbibition; imbibition, however, hampered by the long paraffin chains and limited to those regions or strata where the hydrophile groups can congregate.

In two words, therefore, the hypothesis is that myelin forms are due to surface growth and localised imbibition. With this provisional conception of the general nature of the phenomenon, the study outlined above has been directed on three lines: (1) The influence of the presence of various ions in the water; (2) the influence of osmotic pressure; (3) the influence of substances that may be supposed to concentrate at the interface. There remains something to be said under each of these heads and also something on a fourth point, the effect of the presence of cholesterol mixed with or dissolved in the lecithine.

(1) *The Influence of Various Ions.*—In Fig. 13 photographs are shown of the appearance of lecithine 24 hours after being brought into contact with water, with dilute ammonia, and with soda and potash (N/100 in each case). The action of the alkaline fluids differs from that of water in the greater tendency for spherical shapes to arise rather than elongated cylindrical forms; and also in the wrinkled markings parallel to the surface which are seen also in Fig. 2. There and in Fig. 15 these latter were produced in ammonia. In Fig. 13 they show most distinctly in the case of soda, and in Fig. 14 they were also formed under soda. In some cases it looks as if they led to the peeling off of superficial layers or fragments of layers, in others to the formation of spiral clefts.

Such characteristics common to the influence of ammonium, potassium, and sodium hydrates suggests at first that the hydroxyl ion in some way activated and modified the process. But the fact that calcium hydrate has no such effect seems to make a difficulty; while if the action of the alkaline fluids be ascribed to the monobasic cations a difficulty is created by the fact that the dibasic cations—calcium, barium, and strontium—when compared with one another produce different effects. In the left-hand column of Fig. 16 photographs are reproduced of lecithine streaks in weak solutions (N/100) of the hydrates of these three metals. The calcium hydrate was washed in a mortar with three or four changes of water before the solution was prepared. The strontium hydrate was washed by decantation twice; the baryta water prepared from a stronger solution that had been in stock some time. It appears that strontia and baryta water both allow the outgrowth of myelin forms with a freedom which is not allowed in lime water. Repetitions of this experiment with other solutions of baryta and lime have given results all pointing in the same direction, though most of the forms have been generally spherical and not twisting cylinders. The photographs in the right-hand column are set there for a comparison to be made later, when they will be explained. To test the possibility of small quantities of soda or potash present in the alkaline earths as impurities being responsible for the outgrowth in solutions of barium and strontium hydrate, a series of mixtures of lime water and soda (both N/100) in proportion varying from 1 to 9 down to 9 to 1, were prepared and compared with both the soda and the lime water alone. These showed that it was not a case of the presence of small quantities of lime preventing the appearances characteristic for soda, but rather of the presence of soda preventing those characteristic for lime water. The formation of buds, and a mass of spheroidal forms was conspicuous when there was more lime water than soda, even with four times as much, while with equal quantities of the two the appearances shown in Fig. 14 were obtained after 24 hours. Relatively small amounts of soda, possibly the amounts that may be extracted from ordinary glass vessels, may cause myelin forms to appear in lime water or baryta, and possibly strictly pure baryta would not give them. But however that may prove on further investigation, there is no such "precipitation" of lecithine by lime or baryta as to prevent the myelin forms appearing, and a Ringer's solution with calcium gives appearances essentially the same as those given by Ringer's solution prepared without calcium.

The film from which Fig. 10 was prepared shows that the strong solution of calcium chloride obtained from a bottle of pure crystals which had partly deliquesced gives a result similar to that with lime water in appearance. A similar solution of magnesium chloride gives a similar result. But both these solutions diluted to 1/100 of this strength allow a very free outgrowth of myelin forms, mostly but not entirely spherical.

The effect of different reactions on either side of the neutral point was also tested, using ten phosphate mixtures of pH ranging from 6·3 to 7·7. All showed myelin forms freely growing at first and finally a remarkable reticulation of the central parts of the mass. Fig. 17 is a reproduction of a photograph taken after five days where the reaction was that of the blood pH 7·3. Very similar appearances are seen in Fig. 18, another of the same series at pH 7·5, and in others not here reproduced.

(2) The *effect of high osmotic pressure* in the aqueous phase shown in Figs. 8 and 9 was discussed in connexion with them. And this is illustrated, too, by the action of strong solutions of the chlorides of magnesium and calcium just referred to.

(3) The *effect of adsorbed substances*, illustrated by Figs. 11 and 12, is further illustrated by the appearance of lecithine exposed for 24 hours to dilute gelatin solution (Fig. 19, No. 4) where the growth of myelin forms, which had at first been free, was after a short time almost completely arrested. By way of contrast with this, the coiled and twisted cylindrical protrusions formed under glucose solution (0·1 per cent.) in the same time (Fig. 20) make this arrest of growth in gelatin more conspicuous. But in a drop of human blood serum (Fig. 19, No. 1) their formation is fairly free; and with a solution of hæmoglobin obtained by laking washed blood corpuscles surface growth is obtained as luxuriant as with any fluid tested (Fig. 19). So that proteins do not all act as egg-albumin; hæmoglobin, so far from repressing, actually appears to promote the development of myelin forms.

Influence of Cholesterol on Lecithine.

Lastly, with regard to the influence of cholesterol, in all the experiments, excepting those used for kinema films, on the same slide and under the same drop of fluid a streak of lecithine at one side of the cavity and at the other one of lecithine containing a quarter of its weight of cholesterol was set up, and in this way any differences resulting from the presence of the cholesterol could be observed. In Fig. 15 the edges of the two streaks, that on the right containing cholesterol, had approached so that both appeared in the same field; the fluid here was ammonia N/100. The two edges appear, also in the same relative positions to each other, under dilute hæmoglobin solution in the two lowest photographs of Fig. 19 which are from the same preparation, that on the left after 40, that on the right after 90 hours. In Fig. 16 each pair of photographs was taken from the same slide, the right-hand ones from the lecithine containing cholesterol, the left from that containing none. Similarly, Fig. 18 can be compared with Fig. 17. Figs. 21 and 22 are also from lecithine containing cholesterol. It is too early to attempt a definition of the effect of cholesterol. But it does not at any rate hinder either surface growth or swelling. In some cases, as in lime water, it promotes the appearance of myelin forms, and generally it increases the regularity of the shapes.

THE TECHNIQUE OF SUPRAPUBIC PROSTATECTOMY.

FROM THE CLINIC OF PROF. HUGH CABOT, UNIVERSITY OF MICHIGAN, ANN ARBOR, U.S.A.

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THE general management of cases of suprapubic prostatectomy has remained almost unchanged in England since the operation was first introduced by Freyer, with the single exception of the modification of the "open operation" described by Sir John Thomson-Walker, and by Judd, of the Mayo Clinic. While the technique devised by Prof. Cabot may not differ greatly from that practised by individual surgeons in England, yet the whole procedure stands as an example of successful scientific surgery, based on sound experimental and pathological work, and establishes the importance of pre-operative drainage of the bladder. It was my good fortune to work for a year with him, and this article describing and explaining his methods may be taken as a token of my very sincere gratitude.

Pre-operative Drainage.

On admission to hospital bladder drainage is instituted in all cases as a routine measure. This is done either by the indwelling catheter or by suprapubic cystotomy, and is irrespective of there being urinary infection or marked residual urine for the following reasons. Any degree of prostatic enlargement sufficient to produce symptoms, will ipso facto have produced hypertrophy of the bladder wall, and consequent on this some thickening and congestion of the mucosa. At this early stage the "back pressure" will not be enough to impair the kidney function. But the bladder mucosa will have lowered powers of resistance, and experimental work has shown that though infection cannot be produced in the normal bladder, yet when urinary obstruction or over-distension is present organisms introduced will always cause infection. Further, when the pressure is suddenly released the congestion of the mucosa is increased, and actual petechial hæmorrhages may occur. It is axiomatic that when prostatectomy is performed micro-organisms enter the bladder from the surface of the body, either at the time of operation or shortly afterwards. In a congested bladder we have the "prepared soil" for the production of inflammation. Drainage will relieve the pressure and the congestion, and may further act by producing some degree of active immunity.

When much residual non-infected urine is present the so-called "back pressure" is transmitted to the renal pelvis, producing varying degrees of hydronephrosis. The papillary ducts are unable to empty readily into the renal pelvis, and the "back pressure" is transmitted to the whole of the glomerulotubular system. The kidney becomes congested and renal function is impaired. This becomes apparent, first, as a deficiency in the excretory function of the kidney, and later by an actual retention in the blood of urea and other nitrogen waste products.

It is this type of case, with from 6 to 10 oz. of uninfected urine, and clinically a good "operative risk," which is responsible for the high mortality amongst cases in which bladder drainage is not carried out. Some marked disturbance of renal function may result from the sudden lowering of pressure, and congested renal tissue is again a "prepared soil" for circulating organisms, or for those ascending by the lymphatics from the bladder infected at operation.

If the residual urine is infected, but the patient's general condition good and his renal function tests satisfactory, the case is usually a better operative risk than a patient in a similar condition but with uninfected urine, because in the former case he has acquired an active immunity to such organisms throughout his urinary tract. Some estimate of the patient's general powers of resistance may apparently be obtained by examination of the cholesterol content of the blood. This, with the blood-urea estimation and the phenolsulphonephthalein excretion may form the renal "tripod of tests"—the term suggested by Mackenzie Wallis for the pancreas.

Renal Function Tests.

In Prof. Cabot's clinic two tests of renal function are employed, the blood-urea and the phenolsulphonephthalein. These are considered in conjunction with the general physical condition, the blood pressure, and the volume of urine secreted in relation to the fluid intake in determining the patient's fitness for operation.

The *blood-urea examination* indicates the degree of retention of the nitrogen metabolites; 0·2 per cent. is taken as a normal value and 0·4 per cent. as a high normal.

The *phenolsulphonephthalein estimation* is a test of the efficiency of renal excretion, and was devised by Rowntree and Gerharty. It is based upon the specific selective power of the renal epithelium to excrete even small doses of the dye, and is capable of accurate quantitative estimation. That it has not come into more general use in this country may be due to a misconception of the technique. The test is performed as follows: The patient takes from 200 to 400 c.cm. of water half an hour before the test; 1 c.cm. of a solution of phenolsulphonephthalein, containing 6 mg. of the dye to the cubic centimetre, is injected intravenously and the time noted. (A catheter is first placed in the bladder if an indwelling catheter is not being employed.) The catheter is allowed to drip into a white kidney basin or a cup containing sodium hydroxide solution and the time of appearance of the dye noted. The urine is then collected in a clean bottle for one hour from the time of appearance (not the time of injection as is sometimes the case) and a further specimen collected for the second hour. Enough sodium hydroxide is added to each specimen to make it strongly pink without precipitating the phosphates. The amount of dye excreted is estimated by comparison with a known standard in a colorimeter. An appearance time of from three to six minutes is normal and a total function for the two hours of 80 per cent. or over. The total function should be at least 50 per cent. before prostatectomy is performed. The appearance time alone does not give any very reliable information. Sometimes a small quantity of dye comes through fairly early in a damaged kidney. When the appearance time is long, but the total function is good, it means that the catheter is not in the lowest point of the bladder, or that a large post-prostatic pouch is present.

An interesting piece of evidence of the effect of "back pressure" on the renal function is shown by this test. When performed at the time of the first catheterisation of a patient with much residual urine satisfactory figures may be obtained. If it is repeated in three or four days a very marked drop will be noticed, and this has been ascribed to the decompressing of the kidney following the release of back pressure. This allows a great increase in the blood within the organ, and swelling and congestion take place, with a consequent diminution of the renal function. After this initial drop the renal function gradually increases, and unless the kidney has been severely damaged a good percentage will be obtained after a period of drainage. It is common knowledge that prostatectomy performed at the same time as retention is relieved, or in a case with much residual urine, is a highly fatal procedure.

Drainage by the Catheter.

A soft, red rubber catheter is introduced and tied into the bladder, the eye being at the lowest point at which it will just run. It is then connected by fine

tubing with a bottle attached to the side of the bed. A rubber catheter is tolerated better than a silk web or gum-elastic one, though a mild urethritis will be produced even by its presence. This may be expected and has no bearing on the course of the case. The catheter is left in until the patient is ready for operation. A few days after its introduction a transient rise of temperature, from 100° to 103°, will occur, and last one or two days. This reaction is an almost constant one, and is due to the production of a mild grade of cystitis. In cases that are drained it is found that the cystitis following prostatectomy is much less marked than in the undrained ones. When the renal function tests are satisfactory such a case is usually ready for operation about one week after the reaction has subsided. About 40 per cent. of patients do not tolerate the indwelling catheter well, the usual reason being that the tip of the catheter is touching and perhaps ulcerating a projecting median lobe. They complain of pain or irritation and the catheter has to be removed. A small number of patients bleed, and here again catheter drainage is unsuitable.

When it is difficult to introduce a rubber catheter, it may be passed threaded over and stretched on a metal stylette, bent to the appropriate curve. If this fails a coudé or bi-coudé catheter should be passed and left in position for 24 hours, when the passage of a soft rubber catheter will probably be easy. If for any reason the indwelling catheter has to be removed, or if the patient is a poor operative risk, either clinically or by renal function tests, and prolonged drainage is likely to be required, the surgeon should proceed at once to drain the bladder by suprapubic cystotomy.

Suprapubic Cystotomy.

This may be performed either for drainage, as the first stage of the two-stage operation, when it is usually done under local anæsthesia, or as the first part of the single-stage prostatectomy after catheter drainage. It requires no detailed description though a few special points will be noted.

The bladder is distended in the usual way, and a mid-line incision made commencing one finger-breadth above the upper border of the symphysis pubis. This lower limit should not be transgressed. When the extraperitoneal, or perivesical fat, has been reached, the surgeon when incising or tearing through it should avoid any downward extension, in order not to open the loose cellular tissue of the retro-pubic space of Retzius. The separation of the bladder from the posterior aspect of the symphysis which is sometimes done may lead to infection of this space, adhesion of the bladder to the symphysis, and even to osteomyelitis of the symphysis. If the space is accidentally opened up it should be drained.

At this stage of the operation the lower limit of the parietal peritoneum will be seen as a fold on the surface of the bladder. It should be pushed upwards and gently stripped from the bladder with the finger. The bladder is next secured with tenaculum forceps or retaining sutures and incised in a vertical direction as high up as possible. A lower incision will tend to sink down behind the symphysis when the bladder contracts. The bladder is explored with the finger and the condition of the prostate investigated. Calculi, if present, are removed. A "de Pezzer" catheter is introduced, the mushroom end being just within the bladder, and the incision is sutured with catgut commencing below. The suture is at first through and through, but on reaching the catheter it is reversed and carried back to the lower end as an infolding suture through the muscle coat only. It is tied at the point of commencement. The abdominal wall is then closed in the usual way.

The patient having been returned to bed, the de Pezzer catheter is connected by tubing to a bottle at the side of the bed, and after the tubes have been filled with water, drainage is maintained by simple syphonage. If done for acute retention the bladder is, of course, not completely emptied, the catheter being clamped, and released at intervals for gradual evacuation. The bladder receives daily irrigation by alternate injection and aspiration of either boric lotion or 1 in 10,000 silver nitrate.

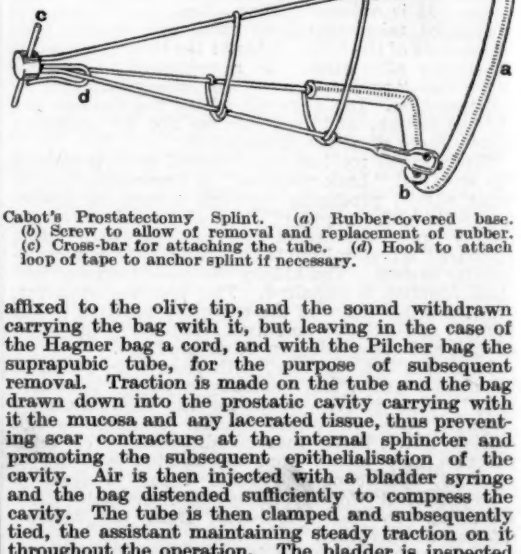
Prostatectomy.

It is, of course, unnecessary to state that the term prostatectomy is a misnomer. The hypertrophic nodules of gland tissue, whether they are believed to be derived from lobules of gland tissue or from embryonic rests, do not involve the whole gland, the remnants of which are compressed and form with the fibrous capsule the "surgical" or practical capsule from within which the adenomata are enucleated. (The enucleation of the adenomatous prostatic enlargement is essentially the same whether performed in one or in two stages.) The right forefinger is introduced through the internal sphincter to dilate it, and the mucosa of the prostatic urethra "cracked" immediately below. This is done along the line of least resistance, usually on the anterior or lateral wall, and the line of cleavage is found. The enucleation is then completed in the usual manner, assisted by a finger of the left hand in the rectum.

Great importance is to be attached to the proper control of hæmorrhage. Bleeding is usually very free from the prostatic cavity, and surgeons are so used to seeing this that some disregard what they would consider as very severe hæmorrhage in any other region. There can be no doubt that the amount of blood lost and the oozing of blood for several days afterwards lowers the patient's resistance greatly. Further, as the prostatic cavity becomes filled with clot, an excellent medium is provided for the growth of micro-organisms, and separation of these infected clots is liable to cause severe secondary hæmorrhage.

The method used for the control of hæmorrhage in the clinic was the hæmostatic bag of Hagner or Pilcher. As soon as all the adenomatous tissue has been enucleated a special sound (Hagner's) with an olive tip, or any well-curved sound, is introduced through the urethra and the tip made to appear in the incision. The tube connected with the bag is

FIG. 1.



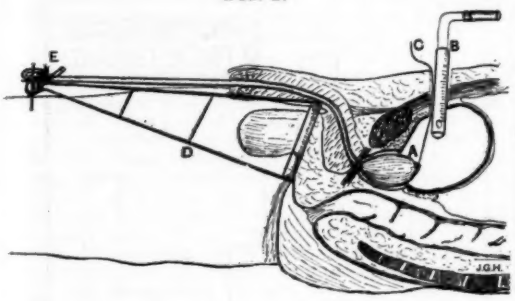
Cabot's Prostatectomy Splint. (*a*) Rubber-covered base. (*b*) Screw to allow of removal and replacement of rubber. (*c*) Cross-bar for attaching the tube. (*d*) Hook to attach loop of tape to anchor splint if necessary.

affixed to the olive tip, and the sound withdrawn carrying the bag with it, but leaving in the case of the Hagner bag a cord, and with the Pilcher bag the suprapubic tube, for the purpose of subsequent removal. Traction is made on the tube and the bag drawn down into the prostatic cavity carrying with it the mucosa and any lacerated tissue, thus preventing scar contracture at the internal sphincter and promoting the subsequent epithelialisation of the cavity. Air is then injected with a bladder syringe and the bag distended sufficiently to compress the cavity. The tube is then clamped and subsequently tied, the assistant maintaining steady traction on it throughout the operation. The bladder is inspected and all clot and debris removed. A large rubber drainage-tube is inserted and fixed in position with a stitch, the end being left long so that a tube can be

connected for syphonage. This completes the two-stage operation, while the one-stage operation is completed in the way described under suprapubic cystotomy.

Dressings are applied and the end of the tube held by the assistant is attached to a cage, invented by Cabot, which maintains traction but still allows the patient to move. It consists of a tripod with a V-shaped rubber-covered base which is applied to the perineum. A large pad of cotton-wool is placed within the frame to support the scrotum. (Figs. 1 and 2.) Tension is released from the bag and the

FIG. 2.



Median sagittal section through the pelvis, illustrating the application of Cabot's prostatectomy splint, or cage. A, Hagner bag in prostatic space. B, Drainage-tube with glass connexion and tube to collecting bottle. C, Cord to bag. D, Cabot's cage in position. E, End of tube doubled back and ligated, attached to cross-bar. The scrotum is supported on a large pad of cotton-wool.

cage removed after 18 to 24 hours, though this may be done after 8 to 10 hours if much discomfort is caused. Should bleeding recur the cage can easily be replaced. About 24 hours after operation the air is released and the bag given an hour to collapse and then removed in the following manner: The drainage-tube is first withdrawn, and the portion of the urethral tube projecting beyond the meatus is cleaned with spirit lotion and then lubricated with K.Y. antiseptic jelly. Gentle traction on the suprapubic cord or tube will readily remove the bag. A de Pezzer catheter is introduced into the bladder, and any small clots removed by the injection and aspiration of boric lotion with a syringe. This also shows that the catheter is properly placed in the bladder for syphonage, which is then instituted, and should keep the patient quite dry. The scrotum is supported by a suitable suspensory bandage, as it appears that support tends to minimise the chances of epididymitis. This complication was rare in the clinic, and bilateral vasectomy was not considered necessary.

The subsequent care of the patient is as follows: Daily injection and aspiration of the bladder with boric lotion, and the urethral injection of 15 c.cm. of a 1 per cent. solution of mercurochrome. This procedure aims at introducing an antiseptic into the prostatic space where infection is most likely to commence. All patients are put on extra fluids, and on 30 gr. of hexamethylene a day from the time of admission. The de Pezzer is replaced by a smaller catheter after four or five days, and at the end of eight to ten days a temporary clamp is applied to it for a short time and the patient instructed as the bladder fills to try to void per urethram. This is repeated twice and for longer periods on the next day and the patient usually succeeds in passing a small quantity of urine. The following day the catheter can be removed, and the patient instructed to void hourly, the suprapubic dressing being changed as required. In 24 to 48 hours the patient should be dry. If difficulty is experienced the probable cause is that the bladder has been markedly atonic and has not yet recovered its muscle tone. In this case a catheter (soft rubber) should be passed and tied in, and the wound will close rapidly.

The technique here described has been practised by Prof. Cabot for many years, and the clinic mortality is under 4 per cent., although the majority of the operating is done by his assistants. It is the principle underlying the procedure, rather than any special detail, that it is my hope this paper may elucidate.

THE PROBLEM OF THE PHLYCTENULAR CHILD.

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AND
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THERE is a great body of opinion that phlyctenules are due to tubercle. Prof. C. Pirquet, of Vienna, for instance, says in a private communication:—

"In phlyctenular conjunctivitis we found regularly a positive tuberculin test; therefore, already in the last 15 years we considered it a tuberculous manifestation."

Fuchs states:—

"In a great number of patients . . . . there are changes which are certainly tuberculous, most frequently appearing under the form of scrofulous lesions of the glands and bones and not infrequently also of pulmonary tuberculosis. But even in those patients who otherwise show no clinically demonstrable evidence of scrofula or tuberculosis, the examination with tuberculin (by subcutaneous injection or cutaneous inoculation) proves with rare exceptions the presence of latent tuberculosis. . . ."

An eminent ophthalmologist notifies every phlyctenular child as a case of tubercle to the authorities. Under the circumstances we thought our phlyctenular cases would offer a rich field for the study of tubercle. We have been disappointed. We examined very carefully a series of 50 consecutive, unselected cases, all with phlyctenules, though not all in the same stages of the disease. Twenty-two cases were in the very earliest stage with slight pyrexia, photophobia, excessive lacrymation, and with noses running, probably from the increased flow of tears down the nasal duct. We find that the temperature, at first 99·5°–100° F., falls to normal in a few days.

Case Records.

Out of a series of 50 consecutive phlyctenular cases 20 were males and 30 females; the average age was 10·43 years; 22 were febrile and 22 afebrile; the Pirquet reaction was positive in 18 and negative in six; the chest was apparently normal in 44 cases (doubtful in six); bones were normal in all but one, who was the subject of tuberculous disease; the glands in 28 instances appeared normal and were enlarged in 21 (five of these being tuberculous); the appetite was good in 39, poor in eight, and fair in three cases; the bowels were regular in 40, loose in three, and constipated in three cases. There was a history of previous measles in 31 cases, of whooping-cough in 19, of German measles in three, of scarlet fever in five, of diphtheria in two, of chicken-pox in 12, of pneumonia in three, of fits in four, and of rickets in four. Information was obtained regarding 383 living and 129 dead relatives of our 50 children. Out of the 50 families 24 members had died of tuberculosis and nine were suffering from it. The average number living in each home was 5·8, and the average number of rooms in each was 3·6. Twelve of the cases were verminous, seven had otitis, 22 enlarged tonsils, 24 coryza. In nine instances other members of the family had phlyctenules.

The following cases seem of sufficient interest to be reported more fully:—

CASE 2.—A boy aged 15. Phlyctenular since the age of 10. Had spent various periods away in the country. He

had a high-domed palate, huge tonsils, and pus in the right antrum. The tonsils and adenoids being removed and the antrum drained, the phlyctenules disappeared.

CASE 6.—A woman aged 25. Pregnant. Phlyctenules for the first time in her life. Seen on 21/8/24. Fine baby delivered on 22/8/24. When doctor called next day the phlyctenules had disappeared.

CASE 22.—A girl aged 12. Had a bad family history of tubercle. She had signs suggestive of early hilum tuberculosis and was admitted to Victoria Park Hospital for further investigation. Signs were very indefinite, but X ray showed increase of the right hilum shadow spreading into the middle lobe. She had no sputum but fæces were negative for T.B. Pirquet reaction positive. Wassermann reaction negative.

CASE 24.—A girl, aged 10, also had suspicious chest signs, and gave a positive Pirquet reaction. On being admitted to hospital for further investigation, however, no definite signs were found and X ray showed a normal chest. Fæces were negative for T.B. A sister also had phlyctenules.

CASE 25.—A boy, aged 6½, had a tuberculous hip, with abscess in thigh.

CASE 35.—A girl of 7, with right convergent concomitant strabismus and phlyctenules since 1922. A dirty, verminous child with impetigo, one of a family of seven living in two rooms. Big tonsils and enlarged glands in neck. At the base of the left lung the percussion note was impaired and there were coarse râles. Pirquet reaction negative. We suggest fibrosis with bronchiolectasis following whooping-cough.

CASE 39.—An ill-nourished boy, aged 10½, formerly had iritis. Pirquet reaction negative to two repeated tests.

CASE 40.—A girl aged 10. At a first examination a few suspicious chest signs were found, but careful investigations in hospital over a period of a fortnight, including an X ray of the chest and examination of fæces, were negative. Pirquet reaction positive.

CASE 45.—A girl aged 17. The phlyctenules always appeared three days before the menstrual periods.

CASE 50.—Had a rickety chest and enlarged septic tonsils. She had a family history of tuberculosis and a positive Pirquet reaction. She had signs in her chest suggestive of enlarged mediastinal glands and fibrosis, but there was no definite evidence of tuberculosis. Wassermann reaction was negative.

We are indebted to Dr. Scott Pinchin and Dr. F. G. Chandler for permission to publish those cases admitted to Victoria Park Chest Hospital.

Discussion of Results.

We will now proceed to a discussion of our results. We started our investigations under the impression that phlyctenules were a manifestation of tuberculosis, which would probably be fairly easy to demonstrate in our cases. Yet we find that in many phlyctenular children there is no evidence to be found of tubercle, either clinically or in the laboratory. Six children gave with the Pirquet tuberculin skin test a negative result. There was no doubt of the activity of our tuberculin, as in each case other children tested at the same time with the same sample gave positive results. Prof. Pirquet himself, in an examination of 193 apparently normal children between 10 and 14 years of age, found his test showed 81 per cent. were tuberculous. The average age of our own children was 10·43 years, and 18 gave a positive, six a negative, result. Other observers in the past have also obtained negatives with the Pirquet cutaneous tuberculin test.

Table Showing Number of Negative Cases.

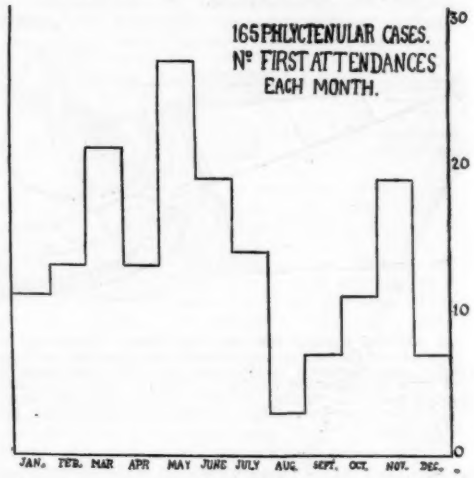
Observer.	Date.	Neg. cases.	Observer.	Date.	Neg. cases.
Ayrenx	1910	15	Derby	1908	5
Belensky			Pyfer	—	8
Raskin	1911	8	Rosenbauch	1910	2
Bruns	1912	40	Turien	—	4
Davis and Vaughan	1912	12	Weekers ..	1909	30
			Total		124

Bruns tried Calmette's ophthalmic tuberculin reaction on those 40 cases negative to Pirquet. He had 37 negative results. The tuberculin tests would therefore seem to show that tuberculosis is absent in many cases of phlyctenular conjunctivitis.

Incidence.

Tuberculosis is a disease without any very marked seasonal incidence. By the courtesy of Mr. W. J. Lindsay we are able to publish a graph showing the months of the year in which 165 cases of phlyctenular conjunctivitis first attended at the Royal Eye Hospital (Fig. 1).

FIG. 1.—*Seasonal Incidence Graph.*



We do not wish to lay very great stress on the marked seasonal variations, shown in Fig. 1, as we think they may be due partly to extraneous causes such as the hop-picking season, school holidays, &c. It would, however, be very interesting to compare a number of graphs of the same sort from different hospitals. We should be very grateful if any such were forthcoming.

In regard to age-incidence we found that the oldest patient in our series was 25, and the average age worked out at 10·43 years. This is consistent with the findings of other observers and cases of phlyctenular conjunctivitis in people over 30 are almost unknown. Tuberculosis occurs at all ages, and although certain organs are more liable to be attacked at different times of life, yet no type of tuberculosis is so limited to a particular period of life as would seem to be the case in phlyctenular conjunctivitis.

Tuberculosis in Relation to Phlyctenules.

Out of 512 relatives of our 50 cases a definite history of tubercle was obtained in 33 instances. An exhaustive inquiry into the family history of 50 normal control children gave 23 tuberculous out of 448 relatives. A strong family history of tubercle need not involve phlyctenules. We were privileged to examine the family histories and medical history sheets of the last 37 admissions into the West-square Orphans' Home. Of these 37 children, 20 had lost one or both parents from consumption. Yet since 1921 they have only had one phlyctenular case. This was a child admitted in May, 1924, from very bad surroundings. She came with phlyctenules already; but they cleared up shortly after admission to the institution. Miss Sharman, an alert old lady of 92, who founded the orphanage nearly 60 years ago and still manages it, states she has seen in all her experience very little eye trouble. In institutions where actually tuberculous children are treated, phlyctenules are not very common. At Victoria

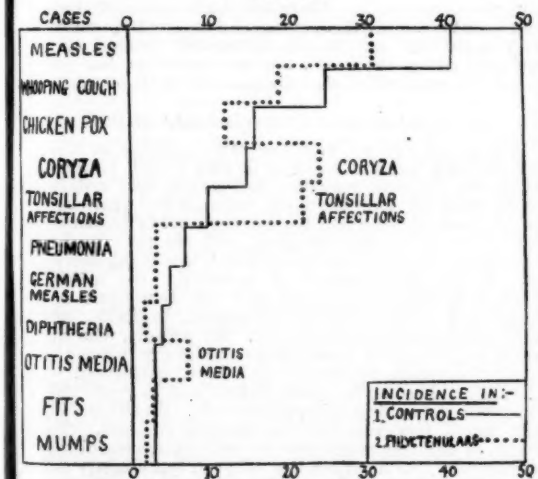
Park Hospital, for instance, among the notes of 240 tuberculous children, in 89 of whom tubercle bacilli were found in the sputum, we find no record of any phlyctenular case.

Phlyctenular conjunctivitis is a disease of the hospital class. Our honorary surgeons at the Royal Eye Hospital do not meet the condition in their private practices. Yet tubercle is no respecter of classes. Surreptitious inspection of a number of medical students showed several with marks of operations for glands in the neck. Phthisis is found in people of every social status. It seems probable, therefore, that while tubercle may be present in many phlyctenular cases, it is not an essential factor in the causation of the disease. It is not disputed that tubercle may be a predisposing cause; but there is little to prove that it is anything more.

Review of Series of 50 Cases.

We proceeded to a review of our series of 50 cases. In each of these we had exhaustive notes of previous illnesses, possible sources of sepsis, &c. But in considering these histories it was important to have a standard of comparison with the normal. We examined, therefore, 50 refraction children in a similar way as controls. The average age of our 50 controls worked out at 9·46 years, while our phlyctenular average was 10·43 years. In doing this we found certain common children's diseases were quite ruled out as possible causes of phlyctenules (see Fig. 2).

FIG. 2.



Comparison between previous illnesses of a group of 50 phlyctenular children and 50 control normal refraction children.

It will be seen that in the cases of measles, whooping-cough, chicken-pox, pneumonia, German measles, fits, and mumps, our control series of children had been quite as much affected as the phlyctenular. More phlyctenular children had suffered from running noses and ears, and many more suffered from, or had had removed, large tonsils and adenoids. At first we thought these increased proportions might be fortuitous, a misleading result due to the examination of insufficient controls. We examined, therefore, 50 more refraction controls for these special points, but were only confirmed in our findings that children with enlarged tonsils and adenoids and those susceptible to coryza were more predisposed than the normal to phlyctenules. We did not think that our cases were sufficient to enable us to decide whether otitis media was really a predisposing cause. In 21 cases in our series enlarged glands were palpated. Only in five cases did we decide these glands were definitely tuberculous. Our method was to palpate enlarged glands on several occasions running. The result was to prove that most of these enlargements were due to transitory causes such as tonsils, pediculi, and impetigo.

In nine of our cases there were other children with phlyctenules in the same family. Special attention was paid to these cases, as conditions were here presumably favourable to the disease. We found that these children were living in conditions of gross overcrowding. The average of these nine cases was 2·04 people to every room in their homes. We did not confine ourselves to taking particulars of bedrooms available, but counted indiscriminately for our average all rooms, sculleries, kitchens, &c., included. The inhabitants of the Waterloo neighbourhood are all rather overcrowded, so we decided to take control statistics. In the families of 50 healthy refraction children there worked out to be 1·446 people per room available. In our series of 50 phlyctenular children there were 1·56 people per room. Where more than one case per family was found the average was 2·04 people for each room available. It seems, then, that the more children are overcrowded the more predisposed they are to phlyctenules. We have already pointed out that phlyctenular keratoconjunctivitis is seldom seen in Harley-street. Our cases were very largely drawn from squalid surroundings. This is shown by the large number of children who were verminous—12 out of 50. Squalid surroundings were found in one or two cases where we made domiciliary visits, which were rather distasteful and consequently soon given up.

Dental sepsis and intestinal toxæmia did not play an important part in our series. Only six had any irregularities of the bowels, and only eight loss of appetite. Malnutrition, we think, acts as a predisposing cause. It is a little difficult to summarise the diet of a large series of children, but in all there would appear to be too great an excess of carbohydrates. The following would be quite typical:—Breakfast: two slices of bread and margarine, some weak tea; dinner: potatoes and gravy (child will not take meat); tea: two slices of bread and margarine with more weak tea. This was the actual diet of a child 4½ years old. Rather an interesting sidelight upon diet was the statement of Case 39, when asked what he would have if he was going to order a luxurious feast. The child was no ascetic and he eagerly replied, "A lot of bread with some real butter, and a very large piece of cheese." Rather more ambitious was a girl of 8 who declared for a steak-and-kidney pudding and a pint of stout.

One child had nystagmus and spasmus nutans; no other children showed abnormalities on a neurological examination and all urines tested were normal.

Our investigations tended to discredit the theory that phlyctenular conjunctivitis is always an outward manifestation of "tuberculi-toxæmia." We now consider that the true ætiology of the disease is unknown. Many investigators have endeavoured to cultivate organisms from excised phlyctenules. Although some of the earlier workers claimed to find staphylococci or Koch-Weeks bacilli, the modern opinion seems to be that this was accidental contamination and that an early phlyctenule, before becoming secondarily infected, is sterile. Similarly, animal inoculation has been performed by many, but never with striking results. Our own inoculation experiments on rather a small scale were completely negative.

We are thrown back, then, on the theory that phlyctenular conjunctivitis is probably a manifestation of endogenous toxæmia, not necessarily tubercle. Further research is badly needed.

Treatment.

All our cases admitted to hospital cleared up very rapidly. We think surroundings have a great influence. Case 12, aged 11¼ years, had suffered from phlyctenules eight years on and off. Away at Swanley Convalescent

Home, May, 1921–August, 1924, the eyes were quite well. Four days after returning home to the New Kent-road the phlyctenules returned. We do not consider tuberculin should be used unless the child gives a positive Pirquet skin reaction. Even then, if three injections of Tuberculin R (Rückstand) bring no improvement, we do not think it is worth continuing. Some cases certainly improve in a striking fashion after tuberculin injections. We are trying the effects of the injection of other protein solutions, but have not got sufficient results yet for publication. Prof. Pirquet, it is interesting to note, says: "As to the tuberculin treatment, we did a lot of it in past years (injections of small doses of old tuberculin), but in the last years we abandoned this treatment nearly entirely, being satisfied with the open air and nutrition treatment." He also points out that in his skin test other proteins often give reactions in tuberculous children, but not so regularly as tuberculin. Locally we are usually satisfied with frequent bathings and the application of 2 per cent. yellow oxide of mercury ointment. In cases of keratitis atropine is often necessary.

Conclusions.

Phlyctenular conjunctivitis is a disease of unknown ætiology but predisposed to by tuberculous infection (not always present), enlarged tonsils and adenoids, frequent colds, overcrowding, dirt, and malnutrition. There seems to be reasonable ground for attributing the cause to endogenous toxæmia (see Cases 2, 6, 45).

THE ALLEVIATION OF CHRONIC PROGRESSIVE DEAFNESS.

A RECORD OF ONE HUNDRED CASES TREATED BY THE ZÜND-BURGUET ELECTROPHONOIDE METHOD.

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IN spite of the advance that aural surgery, in common with other branches of surgery, has made in recent years, otologists have to admit with regret that deafness, when it has become chronic, remains incurable.

Towards the middle of last century Sir William Wilde, the Dublin aurist, now chiefly remembered as the inventor of "Wilde's incision," summed up deafness and its treatment in an aphorism: "There are two kinds of deafness: one is due to wax and is curable, the other is not due to wax and is not curable." This is largely true still, and the reason is not far to seek; it is because we know so little about the ear. In his presidential address to the Otological Section of the Royal Society of Medicine in 1920, Sir Charles Ballance,[1] although he has written the completest work on the surgery of the temporal bone, was constrained to admit: "We are merely on the threshold of our knowledge of the ear"; and Dr. J. Kerr Love,[2] the leading authority on deaf-mutism, in his presidential address in 1924 said: "Outside of surgical treatment there has not been great advance in otology. We can hardly do more than we could do 50 years ago in the cure of deafness."

Chronic progressive deafness is of two kinds: first, that caused by a lesion in the sound-perceiving apparatus, called nerve deafness; and secondly, that caused by a lesion in the sound-conducting apparatus which may be either chronic otitis media or otosclerosis. For nerve deafness hitherto there has been no treatment. The late Mr. Hunter Tod, whose position as head of the largest ear clinic in the United Kingdom gave him a unique experience, said: "In a simple progressive nerve deafness nothing very much can be done."[3] Nor is the prospect more pleasing if we turn to the treatment of chronic otitis media. Sir William Milligan, than whom there is no greater authority, in a paper read before the Section of Otology in 1920,[4] asks: "What is the clinical course of chronic adhesive otitis media in so many of our patients?" and answers his own question by stating: "Slow but progressive deafness—perhaps some intermittent improvement—followed by a gradual loss of hearing, until finally a resort has to be made to some form of artificial aid or to lip-reading. I have painted a dismal picture, for in my opinion there has been no substantial progress in the treatment of adhesive catarrh during the past twenty years."

It may be urged that these writers take a gloomy view because they live in a dull, damp, dismal, and depressing climate and their patients, besides, live in gloomy cities where man does his best to prevent the sun shining by deliberately spreading a pall of smoke over the city. This not only lowers the vitality of the nervous system, which is bad for nerve deafness, but also engenders catarrh, which is bad for catarrhal deafness. Let us therefore cross the Atlantic and see what views are held in a sunnier climate concerning the second subdivision, otosclerosis, and also concerning tinnitus, which often causes more distress to the patient than the deafness. In a paper read before the California State Medical Society,[5] Dr. M. W. Frederick said: "I once asked an aural colleague what he did for people who applied to him for relief from noises in the head, and he told me he sent them to his enemies. This crystallises our attitude towards the otosclerotics. . . . There are some amongst us who can boast of hundreds of successful mastoid operations and count the number of favourably treated sinus thrombosis by the score, but not one of us has ever cured, or even relieved, a single case of otosclerosis."

The Zünd-Burguet Electrophonoide Method.

For many years I held the same opinion as these writers and had got tired of having to tell patients, after the classical remedies had failed, that nothing more could be done for them, when, a few years ago, an old patient, who had tried every kind of treatment for his deafness and tinnitus, told me that he had just heard of a new treatment which was being carried out by Dr. Helsmoortel, of Antwerp. On making further inquiries he found that the treatment had originated with a M. Zünd-Burguet, in Paris, and accordingly he went to see him. My patient, who was aged 43, had had otosclerosis for many years; a radical mastoid operation had been performed on the right side some ten years before, and he could only hear with a speaking-tube on each side. What troubled him most, however, was continuous tinnitus. The result of the treatment was at once unsuccessful and successful. The deafness was relieved but slightly and he still had to use his speaking tube, but the noises were so much decreased that life once more became endurable.

So impressed was I by this result and also by those recorded by Dr. Helsmoortel,[6] that I obtained an electrophonoide from M. Zünd-Burguet. This instrument reproduces the sound vibrations of the whole gamut of the human voice and thus gives a physiological stimulus to the ear. It contains three mechanical larynxes in which the vocal chords are replaced by vibrating platinum lamellæ; these are capable of producing in their desired intensity sounds resembling those of the human voice extending over five octaves and passing not merely through tones and semi-tones, but through all the vibrations between 80 and 3500. This is done by sliding platinum contacts along the vibrating lamellæ, the action resembling the movements of the fingers over the

[1] Proceedings, Royal Society of Medicine, November, 1920.
[2] Ibid., January, 1925.
[3] Hunter Tod: Diseases of the Ear, 1911, p. 277.
[4] Proceedings, Royal Society of Medicine, November, 1920.
[5] M. W. Frederick: New York Medical Journal, Jan. 26th, 1918.
[6] J. Helsmoortel: Etude sur la méthode électrophonique de Zünd-Burguet, 1913, p. 19.

strings of a violin. It should be emphasised that the sounds produced are of varying quality and are variable at will. They are transmitted to the ear by modified telephonic receivers. A secondary current can be superimposed on the primary one which makes the sounds, and a vibratory massage of the whole auditory tract is produced. The complex vibrations produced by the electrophonoide act first as sonorous phenomena and secondly as dynamic phenomena, and it is to this double action that we must attribute the results obtained.

This instrument is a delicate physiological instrument, but, as all experimenters in physiology know, the personality of the experimenter bulks largely in the result of the experiment. Anyone who thinks that the instrument is an automatic machine and all that is necessary to get the results is to turn certain handles, will only succeed in ruining the instrument without benefiting his patient. There is not space here to discuss the theory on which M. Zünd-Burguet founded his treatment of so-called re-education, but those who wish to understand it should read the two books which he has published on the subject.[7]

Results of Treatment in 100 Cases.

I have had an electrophonoide in use for several years, and I now wish to put on record the result of treating patients suffering from so-called incurable chronic progressive deafness, many of whom also suffered from tinnitus. In order to find out the value of this treatment and also to obviate the fallacy that might exist by using other methods of treatment at the same time, I have taken 100 patients and treated them by the Zünd-Burguet method only. I feel justified, therefore, in stating that any benefit that has accrued to them must be due to that method and to that method alone. Every one of these 100 patients before coming to me had consulted two or more otologists of recognised standing, and many had consulted four or five, not only in London but in the provinces and abroad; in every case the deafness had been pronounced to be impossible of alleviation.

The treatment labours under two disadvantages. First, that it is not possible to tell from any tests made beforehand whether it will be successful or not. *There is a factor in deafness as yet unrecognised, the presence of which—or it may be the absence of which—determines the result.* Secondly, that as the deafness is chronic and progressive, and the improvement obtained after a full course lasts only six to nine months, in order to keep up the improvement another course is required. Sometimes, however, I have known the improvement to continue for one or two years without further treatment. The usual course of treatment consists of 30 sittings, but on account of this unknown factor it is necessary to give a preliminary course of 12 treatments; if considerable improvement occur it is worth while giving a full course; if there be no improvement it is not. The improvement must be considered in relation to normal hearing and not merely in relation to the amount of hearing the patient had previously; for instance, if a patient hear the ordinary voice at 6 inches or 1 foot and that distance be increased to 1 foot or 2 feet, even though the improvement be 100 per cent. or more, it still leaves the patient, for all useful purposes, as deaf as before; the improvement is in reality negligible, and it is useless to go on.

The tuning-fork tests afford no clue beforehand as to the possibility of alleviation. The watch and acoumeter I consider useless tests for any practical purpose in these cases and never employ them. The only useful tests are the tests made by the voice, as that is what these deaf people want to be able to hear. It is necessary, therefore, to compare the tests made by voice and whisper before and after the 12 treatments. We shall discuss the whisper first as the less important; indeed, I have been struck by the want of correlation between the improvement in the ability to hear the voice and the improvement in the ability to hear a whisper. The whisper used is one of constant strength; this is attained by taking a breath and forcing it out again, using only the residual air for the whisper. It may seem a work of supererogation to take a breath each time before forcing it out, but it is only by so doing that the whisper can be kept of constant strength, as otherwise one may begin to whisper sometimes with the lungs full, sometimes with them half full, and at other times with them empty, which would give a different result each time. I may mention an anecdote apropos of this. A deaf physician, a friend of mine, went with a deaf patient who was about to try a new treatment. The patient was tested by the otologist with a whisper so low that my friend could not hear it. After undergoing the treatment the patient was tested with a whisper so very much louder that my friend felt constrained to say: "It is indeed a wonderful treatment, Sir, because not only has it made my patient hear better, but it has made *me* hear better."

There remains, then, the voice, the only test that is of importance for these deaf people, as the whole aim and object of the treatment is to enable them to hear the voice when used in ordinary conversation. Some of my colleagues, albeit in quite a friendly way, have hinted that my results are too good to be true, and that, as in the story told above, I have used a louder voice when testing after the treatment than before. I shall therefore, at the risk of obtruding some personal details, say something on this point.

I have been compelled to study the subject of voice production more than most people, because until the age of 25 I had both a lisp and a stammer, and was besides unable to pronounce the letters "l" and "r," substituting "n" for both of them. I studied voice production and "visible speech" with a Mr. Jones, who was sent from America by Alexander Melville Bell and his son Graham Bell to start the first school of "visible speech" in Scotland. Further, I studied voice production and singing at Naples under the late Signor Scafati, the last of the old Italian *bel canto* school. I mention these facts to show that I have studied the subject and have, I believe, sufficient command of my voice and a sufficiently good ear to be able to keep the ordinary or conversational tone for testing.[8] For purposes of comparison, I may say that my conversational voice is heard by a normal hearing person at 80 ft., and my whisper at 20 ft.

The distance at which the voice and the whisper are heard by each ear is recorded before and after treatment. The measurements are all made by tape-measure and not by guess-work. The 100 patients come under three headings—namely: (1) 34 suffering from nerve deafness, (2) 33 suffering from chronic otitis media, and (3) 33 suffering from otosclerosis. No patients suffering from active suppuration in the middle ear have been included, nor cases of mixed deafness, nor cases of deafness due to syphilis, war injuries, or war neuroses. It will be observed that in some cases the tinnitus has ceased completely after treatment, although the deafness may not have been greatly alleviated; in others the tinnitus has not ceased, although the deafness has been alleviated.

In the accompanying tables the record of the left ear is given on the left of the column and that of the right ear on the right. A record is given first of the distance at which the ordinary conversational voice and whisper (W.) are heard by the left and right ear before treatment (B.T.) and then after treatment (A.T.) The second course of treatment has always been given six months after the first course unless there be a note to the contrary. The result after the second course is marked "2nd" and after the third course "3rd." In order to keep the cases in extended tabular form, so that they can be compared before

[7] A. Zünd-Burguet: Principes d'Anacousie (Rééducation Auditive), 1913; Conduction Sonore et Audition, 1915. London: H. J. Glaisher, 57, Wigmore-street, W. Paris: From the Author, 25, Rue du Général Foy.

[8] G. C. Cathcart: Stammering and Voice Production, System of Treatment (Latham and English), 1912.

and after treatment, I have had to save space by omitting histories of the cases, the records of the tests carried out after the 12 preliminary treatments, and also the results of the tests before beginning the second course. In a few cases the improvement had continued in the interval between the courses, and the hearing was better before beginning the second course than at the end of the first course; but, as a rule, the hearing was not so good by a foot or so before beginning the second course.

Nerve Deafness.

Of the 34 patients comprised in this group 28 improved, including 15 males, whose ages ranged from 15 to 65, and 13 females, whose ages ranged from 9 to 77; six patients, including four males, aged 51, 51, 52, and 60, and two females, aged 51 and 52, did not improve. No. 2 had been advised to go to a school for the deaf and dumb, but after treatment was able to go to an ordinary school. No. 9, between the first and second courses, had a severe attack of influenza and acute otitis media of the right ear, for which paracentesis had to be done, but in spite of that the hearing has improved. No. 20 was tested after an interval of 18 months and was found to have improved considerably, while the tinnitus had not returned.

1. R. S., aged 9, F.

	Left ear.	Right ear.
B.T.	16 ft., W. 6 in.	2 ft., W. nil.
A.T.	30 ft., W. 6 in.	30 ft., W. 6 in.
2nd	30 ft., W. 8 ft.	30 ft., W. 1 ft.

2. D. R., aged 12, F.

B.T.	2 ft., W. nil	2 ft., W. nil.
A.T.	15 ft., W. nil	15 ft., W. nil.
2nd	17 ft., W. at ear	17 ft., W. at ear.

3. A. I., aged 16, M.

B.T.	16 ft., W. 1 ft.	4 ft., W. at ear.
A.T.	40 ft., W. 3 ft.	40 ft., W. 2 ft.
2nd	40 ft., W. 3 ft.	40 ft., W. 2 ft.

4. G. L., aged 20, M.

B.T.	1 ft., W. nil	1 ft., W. 1 in.
A.T.	17 ft., W. 1 in.	20 ft., W. 1 in.

5. B. F., aged 21, M.

B.T.	6 ft., W. 1 in.	2 ft., W. 1 in.
A.T.	13 ft., W. 1 in.	5 ft., W. 1 in.
2nd	15 ft., W. 2 in.	8 ft., W. 1 in.
3rd course after 18 mos.	18 ft., W. 2 in.	10 ft., W. 1 in.

6. W. L., aged 22, M.

B.T.	Shout at ear	1 ft., W. nil.
A.T.	6 in., W. nil	8 ft., W. 6 in.
2nd after 2 yrs.	2 ft., W. nil	26 ft., W. 6 in.

7. G. F. C., aged 23, F.

B.T.	13 ft., W. 1 ft.	15 ft., W. 2 ft.
A.T.	40 ft., W. 3 ft.	40 ft., W. 6 ft.
	Tinnitus ceased.	

8. Mrs. R. D., aged 27.

B.T.	2 ft., W. nil	6 ft., W. 2 in.
A.T.	10 ft., W. at ear	25 ft., W. 6 in.
2nd	12 ft., W. 1 in.	30 ft., W. 9 in.

9. E. F., aged 31, M.

B.T.	16 ft., W. 2 ft.	14 ft., W. 6 in.
A.T.	35 ft., W. 3 ft.	33 ft., W. 1 ft.
2nd	38 ft., W. 4 ft.	38 ft., W. 2 ft.

10. N. K., aged 35, F.

B.T.	4 ft., W. at ear	10 ft., W. at ear.
A.T.	30 ft., W. 3 ft.	30 ft., W. 3 ft.
2nd	35 ft., W. 4 ft.	35 ft., W. 4 ft.

Tested after eight months, hearing had remained the same.

11. C. O., aged 38, M.

B.T.	15 ft., W. 2 in.	15 ft., W. 2 in.
A.T.	30 ft., W. 6 in.	30 ft., W. 6 in.
	Tinnitus ceased.	

Tested after four years. Tinnitus has not returned and hearing has increased to—
35 ft., W. 2 ft. .... 35 ft., W. 1 ft.

12. Mrs. F., aged 39.

B.T.	17 ft., W. nil	17 ft., W. nil.
A.T.	40 ft., W. 3 ft.	40 ft., W. 3 ft.
	Tinnitus ceased.	

13. T. J., aged 42, M.

B.T.	10 ft., W. 1 ft.	10 ft., W. 1 ft.
A.T.	35 ft., W. 2 ft.	35 ft., W. 2 ft.

14. Mrs. H. C., aged 44.

	Left ear.	Right ear.
B.T.	16 ft., W. 6 in.	16 ft., W. 6 in.
A.T.	40 ft., W. 4 ft.	40 ft., W. 4 ft.

15. Miss C. M., aged 45.

B.T.	15 ft., W. 2 ft.	2 ft., W. nil.
A.T.	20 ft., W. 3 ft.	20 ft., W. 2 ft.
2nd	25 ft., W. 3 ft.	25 ft., W. 2 ft.

16. G. H., aged 49, M.

B.T.	3 ft., W. nil	2 ft., W. nil.
A.T.	20 ft., W. nil	8 ft., W. nil.
	Tinnitus much less.	
2nd	25 ft., W. 3 ft.	25 ft., W. 2 ft.

17. R. D. D., aged 49, M.

B.T.	16 ft., W. nil.	2 ft., W. nil.
A.T.	30 ft., W. 2 in.	17 ft., W. nil.

18. C. A., aged 49, M.

B.T.	2 ft., W. nil.	6 ft., W. 6 in.
A.T.	4 ft., W. nil.	16 ft., W. 1 ft.
	Tinnitus ceased.	
2nd	6 ft. 6 in.	18 ft., W. 2 ft.

19. Mrs. B., aged 52.

B.T.	16 ft., W. 1 ft.	16 ft., W. 2 ft.
A.T.	35 ft., W. 2 ft.	35 ft., W. 4 ft.

20. Miss M. B., aged 52.

B.T.	16 ft., W. 9 in.	10 ft., W. 9 in.
A.T.	35 ft., W. 12 in.	35 ft., W. 12 in.
	Tinnitus ceased.	

Tested after 18 months. Tinnitus had not returned and hearing had improved to—
45 ft., W. 18 in. .... 45 ft., W. 18 in.

21. Miss A. K., aged 50.

B.T.	14 ft., W. nil	16 ft., W. nil.
A.T.	30 ft., W. 1 ft.	35 ft., W. 2 ft.
	Tinnitus ceased.	

22. W. H., aged 56, M.

B.T.	8 ft., W. nil	Shout at ear.
A.T.	18 ft., W. 1 in.	5 ft., W. nil.

23. C. V. L., aged 59, M.

B.T.	6 in., W. nil	16 ft., W. nil.
A.T.	8 ft., W. nil	40 ft., W. nil.

24. C. L. A., aged 60, M.

B.T.	6 in., W. nil	4 ft., W. nil.
A.T.	8 ft., W. nil	20 ft., W. 2 in.
	Tinnitus ceased.	
2nd course after 2 yrs.	9 ft., W. nil	30 ft., W. 3 in.

25. B. S., aged 61, M.

B.T.	18 ft., W. 6 in.	3 ft., W. nil.
A.T.	28 ft., W. 10 in.	12 ft., W. 4 in.
2nd after 1 yr.	30 ft., W. 18 in.	30 ft., W. 8 in.

26. Mrs. W. W., aged 63.

B.T.	12 ft., W. nil	16 ft., W. nil.
A.T.	30 ft., W. 2 ft.	30 ft., W. 2 ft.
	Tinnitus ceased.	
2nd	40 ft., W. 4 ft.	40 ft., W. 3 ft.

27. E. N., aged 65, M.

B.T.	7 ft., W. nil	7 ft., W. nil.
A.T.	30 ft., W. nil	30 ft., W. nil.
2nd	30 ft., W. nil	30 ft., W. nil.
3rd	30 ft., W. nil	30 ft., W. nil.

28. Miss A. L., aged 77.

B.T.	2 ft., W. nil	3 ft., W. nil.
A.T.	20 ft., W. 3 in.	20 ft., W. 3 in.
Tested after 1 yr.	20 ft., W. 3 in.	20 ft., W. 3 in.

Nos. 29 to 34 did not improve after the preliminary 12 treatments.

Chronic Otitis Media.

In this group of 33 patients, 22 improved, comprising 10 males, whose ages ranged from 7 to 63, and 12 females, whose ages ranged from 22 to 60; 11, consisting of 5 males of ages 29 to 58, and 6 females, aged from 25 to 60, did not improve. Case No. 38 had been advised to go to a school for the deaf and dumb, but after treatment he was able to go to an ordinary public school. Cases Nos. 39, 47, and 55 were sent to me by Sir Charles Ballance; some years before he had performed a radical mastoid operation, with grafting, on the right ear in No. 39 and on the left ear in Nos. 47 and 55. It will be observed that Nos. 39 and 47 could hear better in the operated ear, after treatment, than in the other ear.

35. G. C., aged 7, M.

	Left ear.	Right ear.
B.T.	3 ft., W. nil	13 ft., W. nil.
A.T.	18 ft., W. 1 in.	18 ft., W. 1 in.
2nd	28 ft., W. 1 in.	30 ft., W. 1 in.
3rd	30 ft., W. 6 in.	30 ft., W. 6 in.

36. J. D., aged 8, M.

B.T.	6 ft., W. nil.	2 ft., W. nil.
A.T.	23 ft., W. 4 in.	20 ft., W. 2 in.
2nd	25 ft., W. 6 in.	23 ft., W. 4 in.

37. D. B., aged 10, M.

B.T.	10 ft., W. 1 ft.	1 ft., W. nil.
A.T.	23 ft., W. 2 ft.	23 ft., W. 1 in.
	Tinnitus ceased.	
2nd after 15 mos.	40 ft., W. 2 ft.	40 ft., W. 1 in.

38. A. D., aged 11, M.

B.T.	8 ft., W. nil	3 ft., W. nil.
A.T.	20 ft., W. 9 in.	10 ft., W. 3 in.
2nd	20 ft., W. 1 ft.	12 ft., W. 6 in.
3rd after 3 yrs.	20 ft., W. 1 ft.	12 ft., W. 6 in.

39. H. P., aged 20, M.

B.T.	1 ft., W. nil	1 ft., W. nil.
A.T.	6 ft., W. nil	10 ft., W. nil.
	Tinnitus ceased.	
2nd	8 ft., W. nil	16 ft., W. nil.
3rd after 3 yrs.	10 ft., W. 1 in.	18 ft., W. 2 in.

40. Miss N. W., aged 22.

B.T.	3 ft., W. 3 in.	2 ft., W. 2 in.
A.T.	18 ft., W. 9 in.	10 ft., W. 6 in.
	Tinnitus ceased.	
2nd	35 ft., W. 18 in.	35 ft., W. 6 in.

41. Miss B. M., aged 26.

B.T.	1 ft., W. nil	6 ft., W. nil.
A.T.	15 ft., W. 1 ft.	30 ft., W. 1 ft.
	Tinnitus ceased.	
2nd after 1 yr.	20 ft., W. 1 ft.	35 ft., W. 1 ft.

42. Miss M. C., aged 22.

B.T.	6 ft., W. nil	14 ft., W. 2 in.
A.T.	14 ft., W. 6 in.	25 ft., W. 9 in.
	Tinnitus not ceased.	

43. Miss M. L., aged 28.

B.T.	13 ft., W. nil	At ear, W. nil.
A.T.	23 ft., W. 2 ft.	2 ft., W. nil.
	Tinnitus ceased.	
2nd	35 ft., W. 3 ft.	3 ft., W. 1 in.

44. Miss B. L., aged 28.

B.T.	2 ft., W. nil	8 ft., W. 3 in.
A.T.	10 ft., W. 2 in.	15 ft., W. 6 in.
	Tinnitus ceased.	
2nd	12 ft., W. 3 in.	16 ft., W. 9 in.

45. W. H., aged 29, M.

B.T.	14 ft., W. 6 in.	2 ft., W. nil.
A.T.	30 ft., W. 2 ft.	20 ft., W. 6 in.
	Tinnitus ceased.	
2nd	35 ft., W. 2 ft.	20 ft., W. 12 in.

46. J. M., aged 37, M.

B.T.	6 ft., W. nil	At ear, W. nil.
A.T.	20 ft., W. 6 in.	2 ft., W. nil.
	Tinnitus not ceased.	
2nd	25 ft., W. 6 in.	2 ft., W. nil.
3rd	30 ft., W. 6 in.	2 ft., W. nil.

47. C. T. C., aged 38, M.

B.T.	2 ft., W. nil.	1 ft., W. nil.
A.T.	10 ft., W. 1 in.	3 ft., W. nil.
	Tinnitus not ceased.	
2nd	20 ft., W. 9 in.	8 ft., W. 1 in.

48. F. G., aged 38, M.

B.T.	3 ft., W. nil	1 ft., W. nil.
A.T.	16 ft., W. nil	9 ft., W. nil.
2nd	18 ft., W. 6 in.	10 ft., W. 3 in.

49. I. H. H., aged 40, M.

B.T.	9 in., W. nil	8 ft., W. 1 in.
A.T.	2 ft., W. nil.	16 ft., W. 6 in.
2nd	2 ft., W. nil	18 ft., W. 6 in.
Tested after 2 years—	2 ft., W. nil	16 ft., W. 6 in.

50. Mrs. F. J., aged 42.

B.T.	2 ft., W. 1 in.	3 ft., W. nil.
A.T.	6 ft., W. 1 in.	13 ft., W. 1 in.
	Tinnitus not ceased.	
2nd	8 ft., W. 1 in.	19 ft., W. 1 in.
3rd	9 ft., W. 1 in.	20 ft., W. 3 in.

51. Mrs. H. R., aged 43.

B.T.	3 ft., W. 1 in.	13 ft., W. 18 in.
A.T.	30 ft., W. 1 ft.	40 ft., W. 3 ft.
	Tinnitus ceased.	
2nd	40 ft., W. 1 ft.	40 ft., W. 3 ft.

52. Miss V. D. F., aged 44.

B.T.	4 ft., W. nil	2 ft., W. nil.
A.T.	26 ft., W. 9 in.	16 ft., W. 6 in.
	Tinnitus not ceased.	

53. Mrs. A. H., aged 49.

	Left ear.	Right ear.
B.T.	2 ft., W. nil	6 ft., W. nil.
A.T.	7 ft., W. nil	14 ft., W. nil.
	Tinnitus ceased.	
2nd	9 ft., W. nil	20 ft., W. nil.
3rd	16 ft., W. nil.	22 ft., W. nil.

54. Mrs. A. B., aged 53.

B.T.	4 ft., W. nil	1 ft., W. nil.
A.T.	8 ft., W. nil	4 ft., W. nil.
2nd	9 ft., W. 1 in.	4 ft., W. nil.
3rd	10 ft., W. 1 in.	8 ft., W. 1 in.

55. Mrs. B. W., aged 60.

B.T.	1 ft., W. nil.	2 ft., W. nil.
A.T.	10 ft., W. 6 in.	20 ft., W. 2 ft.

56. R. B., aged 63, M.

B.T.	1 ft., W. nil	8 ft., W. nil.
A.T.	2 ft., W. nil	20 ft., W. 2 in.
2nd	2 ft., W. nil	25 ft., W. 3 in.

Nos. 57 to 67 did not improve after the preliminary treatment.

Otosclerosis.

Of the 33 patients in this group, 18 improved; they comprised 4 males, aged 20, 35, 40, and 55, and 14 females, whose ages ranged from 27 to 62. Fifteen did not improve; they comprised 7 males, aged from 25 to 55, and 8 females, aged from 22 to 57. Cases Nos. 69, 72, 76, 80, and 81 had become worse after child-birth and had been told that they would become worse still if they had any more children; but Nos. 69, 72, and 76 have each had a child after the first course, and have not become worse. No. 68, although told that she would become worse if she had a child, had one after the first course and has not become worse. The importance of this may be realised when we find that Sir William Milligan,* in discussing otosclerosis and pregnancy, has gone so far as to raise the following point: "If in a case of advanced deafness where previous pregnancies have invariably increased the existing deafness, and where the patient is again pregnant, whether it is advisable or justifiable to induce premature labour." No. 71, tested after eight months, during which time she has been ill and confined to bed for two months, had only lost 1 ft. of the hearing in the left ear for the voice and 1 ft. for the whisper in the right, but the tinnitus had not returned. No. 83 returned for a second course, not because of deafness, but because the tinnitus, which had been relieved for three years, was beginning to trouble him again.

68. Mrs. W. B., aged 27.

	Left ear.	Right ear.
B.T.	2 ft., W. nil	16 ft., W. 6 in.
A.T.	8 ft., W. nil	23 ft., W. 12 in.
	Tinnitus ceased.	
2nd after 1 yr.	10 ft., W. 1 in.	30 ft., W. 2 ft.

69. Mrs. A., aged 30.

B.T.	3 ft., W. 3 in.	2 ft., W. 2 in.
A.T.	20 ft., W. 1 ft.	20 ft., W. 1 ft.
	Tinnitus ceased.	
2nd	20 ft., W. 1 ft.	20 ft., W. 1 ft.
3rd after 18 mos.	20 ft., W. 1 ft.	20 ft., W. 1 ft.

70. Miss J. D., aged 31.

B.T.	1 ft., W. nil	7 ft., W. nil.
A.T.	5 ft., W. 1 in.	15 ft., W. 6 in.
	Tinnitus not ceased.	
2nd	5 ft., W. 1 in.	18 ft., W. 6 in.

71. Miss H. S., aged 31.

B.T.	1 in., W. nil	2 ft., W. nil.
A.T.	2 ft., W. nil	30 ft., W. 1 ft.
2nd after 1 yr.	3 ft., W. nil	40 ft., W. 1 ft.
Tested after 1 yr.	2 ft., W. nil	40 ft., W. at ear.

72. Mrs. C. J., aged 33.

B.T.	1 ft., W. 1 in.	7 ft., W. 7 in.
A.T.	4 ft., W. 3 in.	16 ft., W. 9 in.
	Tinnitus not ceased.	
2nd	6 ft., W. 5 in.	18 ft., W. 12 in.
3rd	6 ft., W. 6 in.	18 ft., W. 12 in.

73. Miss E. G., aged 34.

B.T.	1 ft., W. nil	2 ft., W. nil.
A.T.	8 ft., W. nil	18 ft., W. 2 in.
	Tinnitus ceased.	
2nd	12 ft., W. 4 in.	20 ft., W. 6 in.
3rd	14 ft., W. 4 in.	23 ft., W. 9 in.

* Journal of Laryngology, Rhinology, and Otology, June, 1906.

74. Mrs. P., aged 35.

	Left ear.	Right ear.
B.T.	6 ft., W. nil	16 ft., W. 6 in.
A.T.	17 ft., W. 3 in.	30 ft., W. 12 in.

75. G. W., aged 36, M.

B.T.	1 ft., W. nil	8 ft., W. nil.
A.T.	16 ft., W. 6 in.	18 ft., W. 1 ft.
	Tinnitus ceased.	
2nd	23 ft., W. 6 in.	25 ft., W. 1 ft.
3rd	30 ft., W. 1 ft.	35 ft., W. 2 ft.

76. Mrs. M. S., aged 37.

B.T.	4 ft., W. nil	Shout at ear.
A.T.	16 ft., W. 1 in.	6 in., W. nil.
	Tinnitus ceased.	
2nd	18 ft., W. 2 in.	1 ft., W. nil.

77. Mrs. H. D., aged 40.

B.T.	9 in., W. nil.	2 ft., W. nil.
A.T.	2 ft., W. nil	30 ft., W. 6 in.
	Tinnitus ceased.	
2nd	3 ft., W. 1 in.	30 ft., W. 6 in.
3rd	4 ft., W. 3 in.	33 ft., W. 12 in.

78. A. R. F., aged 40, M.

B.T.	18 ft., W. 3 in.	8 ft., W. nil.
A.T.	22 ft., W. 6 in.	12 ft., W. nil.
	Tinnitus not ceased.	
2nd	30 ft., W. 9 in.	12 ft., W. 1 in.

79. Mrs. W. W., aged 40.

B.T.	1 ft., W. nil	1 ft., W. nil.
A.T.	6 ft., W. nil	20 ft., W. 6 in.
	Tinnitus ceased.	
2nd	10 ft., W. 3 in.	30 ft., W. 9 in.
3rd	18 ft., W. 9 in.	30 ft., W. 12 in.

80. Mrs. A. W., aged 42.

B.T.	At ear.	1 ft., W. nil.
A.T.	6 ft., W. nil	20 ft., W. 1 in.

81. Mrs. G., aged 45.

B.T.	1 in., W. nil	4 ft., W. nil.
A.T.	6 in., W. nil	20 ft., W. nil.
	Tinnitus ceased.	
2nd	7 ft., W. nil	28 ft., W. nil.

82. Miss A. K., aged 47.

B.T.	2 ft., W. nil.	3 ft., W. nil.
A.T.	15 ft., W. 2 in.	15 ft., W. 2 in.
2nd	20 ft., W. 6 in.	20 ft., W. 6 in.

83. Miss E. L., aged 48.

B.T.	1 ft., W. nil	1 ft., W. nil.
A.T.	6 ft., W. nil	12 ft., W. nil.
	Tinnitus not ceased.	
2nd	8 ft., W. 2 in.	14 ft., W. 3 in.

84. M. G., aged 55, M.

B.T.	3 ft., W. nil	3 ft., W. nil.
A.T.	17 ft., W. 6 in.	17 ft., W. 6 in.
	Tinnitus ceased.	
2nd after 3 yr. interval	22 ft., W. 2 ft.	18 ft., W. 2 ft.

85. Miss E. E., aged 62.

B.T.	14 ft., W. 1 in.	2 ft., W. nil.
A.T.	24 ft., W. 2 in.	10 ft., W. 1 in.
2nd after 1 yr.	30 ft., W. 3 in.	20 ft., W. 1 in.

Nos. 86 to 100 did not improve after the preliminary treatment.

Conclusion.

I submit that my results show that this method of treatment, when properly carried out, affords the most substantial advance in the treatment of chronic progressive deafness of recent years, and that it deserves more serious consideration from otologists than it has hitherto received. Of the total number of cases, 68 per cent. have definitely improved after treatment. These comprise 81 per cent. of the cases of nerve deafness, 67 per cent. of the cases of chronic otitis media, and 55 per cent. of the cases of otosclerosis. The improvement in so large a proportion of patients, every one of whom had already been treated by the ordinary methods and pronounced incapable of improvement, cannot be lightly dismissed as a mere manifestation of suggestion or auto-suggestion.

As regards tinnitus, the records above show that this treatment not only alleviates it but often causes it to disappear completely. It is not an exaggeration, therefore, to claim that the electrophonoide treatment, when properly carried out, can and often does cure tinnitus.

Clinical and Laboratory Notes.

SUCCESSFUL COLLAPSE OF LUNG BY ARTIFICIAL PNEUMOTHORAX IN ADVANCED FIBROID PHTHISIS.

BY C. H. C. DALTON, M.A. CAMB., M.R.C.S.,
LATE HOUSE PHYSICIAN, CITY OF LONDON HOSPITAL FOR DISEASES OF THE HEART AND LUNGS, VICTORIA PARK.

THE following case is of considerable interest, in that it shows that almost complete collapse of the affected lung was obtained in a very marked case of fibroid phthisis which, clinically, presented very little hope of this result being obtained.

The patient was a male, aged 22, and was admitted to this hospital on Nov. 7th, 1924, under the care of Dr. F. G. Chandler.

History.—Hæmoptysis in August, 1921; pleurisy and hæmoptysis in August, 1922. Treated at Brompton Hospital and at Godalming Sanatorium; in this hospital from July 18th to Sept. 8th, 1924; transferred to Whitwell Sanatorium, where he had repeated small hæmoptyses and lost weight

Condition on Admission.—Patient was well nourished; not anæmic. Signs of fibroid lung on right side, with large cavity in axilla; many fine superficial crepitations, especially at base; absent tidal movement; heart displaced very considerably to right. Left lung emphysematous; no signs of pulmonary tuberculosis. Tubercle bacilli were present in the sputum.

FIG. 1.

Tracing from skiagram, showing the condition before pneumothorax treatment was commenced. It shows the heart displaced completely into the right side of the thorax, along with marked displacement of the mediastinum.

X Ray Examination.—Extensive fibrosis of the right lung; heart displaced completely into right side of chest (see Fig. 1); no signs of active disease in the left lung.

Operation.—I induced artificial pneumothorax on Nov. 14th, 1924, selecting a point situated 1 inch outside the nipple line in the second intercostal space for introducing the Riviere needle. Pleural fluctuations of $-6+2$ cm. of water were obtained, and 400 c.cm. of air were introduced with a final reading of $-2+6$ cm. of water. On the following day the initial fluctuations were $-2+4$ cm. water; 650 c.cm. of air were introduced and the final reading was $-5+1$; it was probable that a considerable adhesion had been

broken down during this refill. Collapse, as illustrated by Fig. 2, was obtained at subsequent refills, without difficulty.

It is observed that the heart and mediastinum, which were previously displaced to a considerable degree, have now been restored to their normal situation. Clinically, the patient is now making excellent progress.

In recommending the adoption of pneumothorax treatment in any individual case, Riviere[1] gives the

FIG. 2.

Skiagram showing the right lung completely collapsed. It will be observed that the heart and mediastinum have been returned to their normal situation.

following points as suggesting the possibility or likelihood of efficient collapse not being obtained owing to the presence of an adherent pleura or extensive adhesions: Long-standing widespread disease; extensive fibrosis with many fine superficial crackling râles; marked displacement of organs; absent tidal movement; a history of pleurisy.

It is interesting to note that in this case all these points were present. I would observe further that the pleural space was found at the first attempt, and that at no time did the intrapleural pressure rise above −2 +6 cm. of water.

I am indebted to Dr. Chandler for his kind permission to publish this case.

SECONDARY SARCOMA OF THE PANCREAS CAUSING JAUNDICE IN A CHILD.

BY JAMES CROOKS, M.B., CH.B. EDIN.,
HOUSE PHYSICIAN, HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET.

THE interest of the following case lies in the clinical manifestations and in the unusual distribution of the metastatic growths.

On March 2nd, 1925, a girl, aged 10 years, was admitted to the Hospital for Sick Children, under the care of Dr. F. J. Poynton, to whom I am indebted for permission to publish this note.

[1] Pneumothorax Treatment of Pulmonary Tuberculosis, by Clive Riviere, M.D., F.R.C.P., 1917, Ch. V., p. 60.

History.—She had been ailing for two months, and had complained of headache. For a week before admission she had recurrent epigastric pain, and vomited twice.

Condition on Admission.—The patient was well developed and nourished, but was languid, pale, and puffy about the eyes. The abdomen was rather protuberant, but had no irregularity of contour; on palpation it was doughy, and the right subcostal region was full and resistant. The edge of the liver could be detected two fingers' breadth below the costal margin, and in the region of the gall-bladder an indefinite rounded mass could be felt. The spleen was not palpable. No evidence of disease of the heart or lungs was detected. Except for the absence of both knee-jerks, the central nervous system showed no abnormality.

While in hospital she continued to suffer from abdominal pains and headache. On the third day an icteric tinge appeared in the skin and conjunctivæ, and a small swelling suggesting bulging of the bone was noted over the lateral half of each supraorbital ridge. Next morning the girl passed an offensive clay-coloured stool, the fæces having been of a normal colour up to this time. Examination of the optic fundi showed swelling of the discs and striate hæmorrhages in the surrounding retinæ. The blood picture was unusual. Of 10,312 white cells 44 per cent. were polymorphs, 42 per cent. small lymphocytes, 8·5 per cent. large lymphocytes, 0·5 per cent. large mononuclears, 0·5 per cent. eosinophils, and 4·5 per cent. transitionals. A few myelocytes and normoblasts were seen. The red cells showed polychromatophilia and anisocytosis. The jaundice progressively deepened, and the stools remained clay-coloured. Attacks of epigastric pain increased in duration and severity, and the patient vomited after any food. The liver increased in size and the rounded swelling projecting below it was more readily felt. The bulgings over the eyes extended; that on the left, growing more rapidly, pushed the corresponding eye forward and downward, corneal ulceration resulting. Pressure over the shafts of the femora caused pain. The child died on March 25th, after three weeks in hospital.

Post-mortem Examination.—Both ovaries were found to be equally enlarged. They were 3 in. long by 2 in. broad, dark purple in colour, lobulated, and partly nodular and partly cystic. The pancreas was converted into a firm mass 6 in. long by 2 in. thick, which was attached by its right swollen extremity to the duodenum, where it surrounded the common bile-duct. On section it was white and cirrhotic in the centre, and hæmorrhagic at the periphery. The dark grey-green liver reached four fingers' breadth below the costal margin, and the gall-bladder was distended with dark viscid bile. Both the kidneys and adrenal glands appeared healthy. The thymus was large for the age of the child, hæmorrhagic purple in colour, and nodular. A lymph gland at the root of the right lung and another at the bifurcation of the trachea both showed metastatic enlargement. The left orbit was packed with tumour growth, which pushed forward the eye and spread to the frontal bone, causing the swelling over the supraorbital ridge. Tumour growth was present in the right orbit. There were deposits of new growth over the anterior surface of the fourth and fifth dorsal vertebræ, on the internal aspect of the left ramus of the pubis, and on the outer surface of the calvarium. There was a recent extensive subdural hæmorrhage over the vertex of the brain. Histologically very little gland tissue was found in the ovaries. It was replaced by sarcoma of the small round-cell type. The blood-vessels being ill-formed, there was much hæmorrhage. The pancreas was extensively invaded by sarcoma, small groups of acini being widely separated by masses of neoplasm. The thymus showed metastasis of the same type of growth, and the tissue of the lymph gland from the mediastinum was almost entirely replaced by it. Sections of the other tumour masses described also revealed small round-celled sarcoma, while those of the spleen, kidneys, adrenals, and mesenteric glands proved these organs to be healthy. An interesting point was that the liver showed definite early unilobular cirrhosis; the portal tracts were broadened, the small bile-ducts contained bile casts, and in the liver cells were granules of bile-pigment. There was no evidence of metastatic growth in the liver or lungs.

The conclusion was that sarcoma of the ovaries was the primary disease. Sarcoma of the ovary in girls is bilateral in about half the cases.[1] Obstructive jaundice, a rare condition in a child of this age, presenting as it did all the features of the same condition caused by carcinoma of the head of the pancreas in the adult, was due to secondary sarcoma in the pancreas.

[1] Bland-Sutton: Tumours, Innocent and Malignant, 1922, p. 634.

Medical Societies.

ROYAL SOCIETY OF MEDICINE

SECTION OF MEDICINE.

A MEETING of this Section took place on April 28th, Dr. ROBERT HUTCHISON, the President, being in the chair.

Metabolism and the Sympathetic System.

Prof. E. LESCHKE (Berlin University) read a paper on this subject, in which he discussed some of the problems connected with the regulation of metabolism by sympathetic centres in the diencephalon. Until quite recently, he said, the profession concentrated upon the influence of the endocrine glands as the causative agent in the production of these disturbances, and when he first put forward the view that such troubles as diabetes insipidus, dystrophia adiposo-genitalis, and some forms of glycosuria had a nervous rather than a glandular origin, he was severely criticised. Research during the last few years, however, showed that there was justification for following the line of Claude Bernard, but in the inter-brain instead of the medulla. The diencephalon was, however, very inaccessible for investigation, and to reach it the same technique as for hypophysectomy had to be employed. The difficulty was increased by the close proximity of the pituitary body. Sometimes in diabetes, &c., the pituitary was very carefully examined, but the diencephalon was not regarded as sufficiently important to examine. Karplus and Kreidl, in 1909, obtained clear evidence of the presence of sympathetic centres in this region, and found that its irritation resulted in pupil dilatation and palpebral retraction, as well as vasomotor changes and sweating. Aschner, in 1912, after stimulation of the hypothalamic region, got glycosuria, polyuria, and contraction of uterus, rectum, and bladder. In the same year the author demonstrated the presence of temperature-regulating centres in the diencephalon—i.e., in the tuber cinereum. After irritation of the hypothalamic region there was found to be a diminution of protein metabolism.

Prof. Leschke abandoned the theory of pituitary causation of the conditions named because neither experimental hypophysectomy nor complete destruction or atrophy of the pituitary gland in the human caused polyuria. He had seen disappearance of diabetes insipidus after encephalitis, which was a cerebral, not a glandular disease. The frequent occurrence of diabetes insipidus after skull injuries was easily explicable, as the infundibular region, fixed to the sella turcica, was one of the most exposed parts of the brain to shock and counter-shock. The persistence throughout life of polyuria, in many cases with nervous troubles, and the absence of true pituitary symptoms favoured the theory which located the cause in the diencephalon. Moreover, in some cases even large doses of pituitrin failed to increase urine concentration. Diabetes insipidus seemed to him to be an interesting example of the autonomic nervous regulation of metabolism. Disturbance of this regulation led to polyuria.

With regard to dystrophia adiposo-genitalis, he did not think the posterior lobe of the hypophysis had much influence on either growth or metabolism; but destruction of the anterior lobe nearly always caused one of Fröhlich's symptoms—i.e., genital atrophy. But all the classical phenomena of Fröhlich's syndrome could be experimentally caused by a mere lesion of the diencephalon. He said he believed that the diencephalic centres always played the foremost part in dystrophia adiposo-genitalis, but admittedly the pituitary body exerted a great influence on the function of those centres. Cases of diencephalic origin seemed the most resistant to any form of therapy. The sympathetic centres regulating metabolism and sexual development were closely related but not identical.

In diencephalic obesity the cause was not a lowering of basal metabolism, and in these cases it was necessary to make a functional diagnosis of metabolism—i.e., at rest and after meals of different kinds. These obese cases showed a tendency to oxidise sugar insufficiently, and to change it at once into a fatty deposit, and the respiratory quotient was high. These patients showed a disturbance of the vegetative nervous balance, with more marked irritability of the para-sympathetic part. A variation of pleuri-glandular insufficiency with troubles of sympathetic innervation showed a peculiar pigmentation of the skin, which he termed "dystrophia pigmentosa." It might seem wrong to associate the diencephalon with diabetes now that its pancreatic origin had been proved by the success of insulin therapy, but all glandular activity was under the regulating control of the sympathetic nervous system.

In conclusion, Prof. Leschke said there was a close relation between endocrine glandular activity and sympathetic nervous regulation, and he hoped that by continuing this combined method of research—experimental, clinical, and pathological—a better and more complete understanding of the physiology and pathology of the vegetative nervous system would be arrived at.

Discussion.

Dr. PARKES WEBER said he had seen a man 40 years of age whose whole body was covered with small blackish pigment nævi and who had peculiar cushion-like soft parts at the ends of his fingers and toes and ulnar deviation of the fingers. But there was no typical dystrophia adiposo-genitalis. He regarded that case as allied to Recklinghausen's disease, and held that there was tuberose sclerosis of the brain, as for some time there had been a progressive hemiplegia of the right side of the body.

Dr. W. LANGDON BROWN said he was inclined to agree with Prof. Leschke's conception of the hypothalamus as the head ganglion of the sympathetic nervous system; but he suggested it was possible that the pituitary gland was a mechanism through which the hypothalamus acted—namely, through its posterior lobe. Pituitrin was a powerful antidiuretic which would hold up excessive output of urine for as long as 16 hours. He thought it unlikely that this glandular structure should be placed so close to the hypothalamus unless there were a functional relationship between the two. Pituitrin would even act on the denervated kidney, and he suggested it was put into action through the nervous system. One of the great difficulties in pituitary gland cases was the very partial grouping of the symptoms. Prof. Leschke's suggestion that many of the regulations of the output of water were regulations in the balance between the tissues and the blood was along the present trend of physiology. He had seen a patient for diabetes insipidus, and no evidence of pituitary lesion was found. Some months later she was sent because she had cerebral symptoms, and there were obvious signs of cerebral—probably pituitary—tumour. Yet there was only a slight tendency to polyuria. Ultimately she died, and there was found a tuberculoma of the pituitary body. The case showed that as the lesion advanced in the pituitary diabetes insipidus became a less marked feature. In diabetes too much had been made, he thought, of the pancreatic theory. Allen's work showed that if hyperglycæmia was persistent it would ultimately damage the cell-ions. He did not think all cases were pancreatic in origin, but if hyperglycæmia were allowed to persist they would become so. Diabetes should be regarded as a symptom-complex.

Hypoglycopyresis.

Dr. OTTO LEYTON read a paper bearing this title. It opened with an argument against the practices of naming diseases after men or according to the most prominent symptoms, the chief objection to the latter

being that the most prominent symptom of a disease might be absent in a particular case. A nomenclature based on the morbid causal changes in the tissues was much to be preferred. In 1917 he pointed out that the introduction of small quantities of certain bacterial poisons depressed the carbohydrate metabolism profoundly. When the onset of diabetes mellitus was insidious, there occurred a stage when there was neither polyuria nor glycosuria, but only a slight diminution in the efficiency of carbohydrate metabolism, and this stage he called hypoglycopyresis. There was a close simile between this and hyperthyroidism, as in a mild case of the latter there might be no symptoms unless the patient had an emotional orgy, while in early hypoglycopyresis there was neither polyuria nor glycosuria unless the patient had a carbohydrate orgy. Concerning the question of how the condition could be recognised if there were neither polyuria nor glycosuria, the method he had adopted of recognising deficiency in the carbohydrate metabolism was based on the work of Woodyat and Sansum, who gave intravenous injections of glucose and determined the amount the normal person could receive without developing glycosuria. Dr. Leyton's only modification was that instead of depending on the glycosuria, since renal thresholds differed in various persons, he took samples of blood and assumed that if the sugar in it remained below 0·2 per cent. when the individual was receiving 0·8 g. of dextrose per kilo body-weight per hour for two hours, the carbohydrate metabolism of such person was normal. If he could not burn or store 0·7 g. per kilo body-weight per hour, the carbohydrate metabolism was depressed; but such a person would not be likely to suffer from glycosuria. Dextrose was injected intravenously because oral administration was fallacious. Only the purest dextrose in sealed tins should be used, and it should not have been kept exposed to the air; also distilled water which had been autoclaved directly after distillation should be employed.

Dr. Leyton related several instructive cases. The paper was not discussed.

SECTION OF OTOLOGY.

A MEETING of this Section was held on May 2nd, Dr. J. KERR LOVE, the President, being in the chair.

THE MASTOID EMISSARY VEIN.

Mr. ARTHUR CHEATLE submitted a contribution entitled the Mastoid Emissary Vein and its Surgical Importance. In illustration of his subject he showed a number of specimens and many photographic slides. He said this small vessel had received but little attention from English anatomists, and still less from aural surgeons in their published works, yet its clinical importance on occasion loomed large. In most of the 1500 skulls examined in this connexion the emissary vein was single and small, originating on the outer edge of the lateral sinus groove, just below the bend, and having a short course in the substance of the bone, in an upward and backward direction, and opening on the surface just behind the upper posterior edge of the base of the mastoid. A branch of the occipital artery passed through the same canal. It was not uncommon for this vein to be absent, nor for it to be unilateral. Its diameter might be that of a mere thread, that of a wax match, or it might be one-quarter, three-eighths, or half an inch. Where it was over one-eighth of an inch in diameter it must increase the size of the external jugular vein. The emissary vein might be single at its origin and double at its exit; or double at both origin and exit; or double at origin with three points of exit. The vein was always in the substance of the bone; the canal was never surrounded by cells nor running freely across them. The length of its course might be one-sixteenth to three-quarters of an inch, and its exit might be low down in the digastric fossa, or even entirely behind it. In the lower animals it was frequently associated with the petro-squamosal sinus, but only in the human when it was very large. In the large series of skulls examined there were two only in which the lateral sinus came to an abrupt end, emerging through an enormous mastoid foramen, with complete absence of the lower part of the lateral sinus.

Surgical Importance of the Vein.

There was a risk of opening this vein at its exit in making incisions, or in stripping up periosteum in various operative procedures; also in the treatment of lateral sinus thrombosis, or cerebellar abscess, and in doing decompression. Usually, bleeding from it was trivial, and could be easily controlled, but in cases where the vein was of large size wounding of it might be dangerous. In those instances he had suggested the use of a muscle plug. The vein might constitute a channel for the conveyance of septic thrombosis, and it might be infected from the lateral sinus, which was, indeed, inevitable when the vein was very large. Or this sinus might be secondarily infected after operation for mastoiditis. Sepsis could spread from this vein to the diploë, causing local inflammatory signs in unexpected parts of the skull. If the sepsis extended down the occipital and external jugular veins it would be necessary to ligature and excise the external jugular.

Discussion.

Dr. DAN MCKENZIE spoke highly of the industry displayed in this research, and pointed out the importance of actually cutting specimens, as contrasted with mere examination, in order to gain the needed familiarity. In an emergency, with no antiseptic wax to stop dangerous bleeding, he suggested the use of a plug of ordinary toilet soap, which he had found to be sterile.

Dr. LOGAN TURNER spoke of the great variation in structure encountered by the surgeon practising otology. In a report he had read of a case of fatal cavernous sinus thrombosis and meningitis, the process of infection was found post mortem to have extended from the occipital vein through the mastoid emissary vein, to the lateral sinus, and thence through the superior petrosal to the cavernous sinus.

EXHIBITION OF CASES.

Bilateral Mumps Deafness.

Mr. NICOL RANKIN reported the case of a girl, aged 10, who, three and a half months ago, had a pyrexial attack and some transient vertigo, followed by ringing and thumping in both ears. A fortnight later she suddenly became deaf on the left side, and next day on the right. At this time she was found to have mumps. Vestibular tests showed a normal ocular response, but no vertigo, though prolonged rotation caused vomiting.

Several members stated that they had found pilocarpine for this condition disappointing.—Sir WILLIAM MILLIGAN said that in some of the cases of the kind which he had seen he thought there was a localised basal meningitis.

Sudden Bilateral Nerve Deafness.

Dr. MCKENZIE showed a girl, 10 years of age, who woke up one morning two years ago with almost total deafness on both sides. There was no vertigo, nor any other apparent illness, and the ears had not discharged. Mumps occurred a year after the deafness commenced. The Wassermann test was negative.

The PRESIDENT thought the condition was probably a neuritis of the eighth nerve, though he did not know why it should affect the cochlear branches.—Mr. CHEATLE regarded the case as a functional one; probably the child had been in association with deaf people. He advocated putting the child into new surroundings and treating her with faradism.—Sir JAMES DUNDAS-GRANT agreed with Mr. Cheatle's view, but he did not doubt the deafness. The mother stated that the child had had a fall on the day preceding the onset of the deafness, striking the back

of her head.—Sir WILLIAM MILLIGAN thought the suddenness of the onset in this case excluded the neuritis idea. His view was that the diagnosis rested between some vascular change and a hysterical condition. He suggested X ray examination, to search for bone damage as a result of the fall. Auto-suggestion might be a useful form of treatment.

Radical Mastoid Operation Performed by Nature.

Mr. ARCHER RYLAND showed a woman, aged 38, who had suffered from chronic middle-ear suppuration, and had a cholesteatoma; the process had resulted in decay of bone and the complete performance of the radical mastoid operation without surgical interposition. When he saw the patient the whole cavity had been epithelialised.

Sir J. DUNDAS-GRANT said the case enforced the view he had put forward that when the lining of a cholesteatomatous cavity was homogeneous, well attached, and shiny, it should be conserved, as it served the purpose of a skin-graft.

CORRIGENDA.—Dr. Langdon Brown writes: "I am sorry to observe several rather serious inaccuracies in your report of my opening remarks in the debate on Endocrine Therapy at the Royal Society of Medicine (THE LANCET, April 4th, p. 739). The statement that 'The oral method was very uncertain except in a few cases of pituitary administration,' would exclude thyroid extract which I gave as the classical example of successful administration by the mouth. In the sentence 'Parathyroid had a great function as a katabolic agent; if its normal secretion were diminished there was an accumulation of waste tissue in the body,' *thyroid* should be read. The next sentence relates to parathyroid, though I did not claim it would probably produce a 'great' rise in the calcium content of the blood. Nor did I say that adrenalin was of value as a local anæsthetic, but that it was used for its local effect on blood-vessels, as in local anæsthesia, meaning that it prevented too wide diffusion of the local anæsthetic, in this way. In saying that pituitary extract is valuable in diabetes, unless the word 'insipidus' is added the reference might be to diabetes mellitus. I did not claim that 'many [diabetic patients] were able to return to normal life without the continuance of insulin.' I said they were keeping free from glycosuria with a normal blood-sugar; but they continued to diet, which is not returning to a normal life."

Dr. Harold J. Phillips informs us that in the report of the British Congress of Obstetrics and Gynæcology (THE LANCET, May 2nd, p. 921) the remarks ascribed to Prof. M. H. Phillips were made by himself.

Reviews and Notices of Books.

FRACTURES AND DISLOCATIONS.

By PHILIP D. WILSON, A.B., M.D., F.A.C.S., Instructor in Orthopædic Surgery, Harvard Medical School; and WILLIAM A. COCHRANE, M.B., Ch.B., F.R.C.S. Edin., University Tutor in Clinical Surgery, University of Edinburgh. London: J. B. Lippincott Company. With 978 illustrations. Pp. 789+xv. 45*s*.

THIS is a work of international significance. The two names on the title-page assure it a respectful reception from the surgical public, but in America it represents more than individual opinions. We are told in the preface that the facts and views herein stated represent as faithfully as possible those of the staff of the Fracture Service of the Massachusetts General Hospital, Boston, Mass., and that this staff is composed of six surgeons, two from each of the two surgical services and two from the Orthopædic Service. The staff has arrived at practical unanimity on its special subject, and more than this, a conference of representative surgeons of wide experience from different sections of the United States and Canada, which met in Boston in 1922, accepted practically all the recommendations of the Boston Service and made additions to them which are here included.

In a foreword Dr. Daniel Jones, chief of staff of the Massachusetts General Hospital Fracture Service, records his approval on behalf of that staff of the views expressed in this book. As to the British side, it is stated that "in respect to treatment a substantial agreement exists in the two institutions on opposite sides of the Atlantic." This work therefore comes to us with weighty authority behind it, and thus stands in quite a different category from works on fractures which represent the experience and methods of one surgeon only. Throughout the book the functional value of results is insisted upon, and the lessons learnt during the war are applied in as far as they are suitable to the conditions of civilian life. The futility of methods of treatment which secured maybe a perfect anatomical result as regards the bone, but left the patient crippled by adhesions and atrophied muscles, is now apparent to all. The modern surgeon realises to-day that the condition of the soft parts needs almost as much thought and care as that of the bones. The authors have tried to keep in mind the needs of the general practitioner, and therefore have stressed non-operative methods of treatment. They have, we believe, succeeded in indicating lines of treatment which are not beyond the reach of well-equipped practitioners.

The first three chapters are taken up with general considerations and the declaration of principles. The value of early active movements and gentle massage is recognised and the importance of the innovations (often misunderstood) of Lucas-Championnière is emphasised. The authors are strong advocates of the use of plaster-of-Paris, but caution readers against its use in an encircling form. If so applied it should be divided at least on one line. Traction is recommended in nearly every case of fracture in the continuity of a limb and skeletal traction by means of one or other form of "ice-tongs" is advocated in many cases, chiefly because of the freedom which it allows for massage and passive and active movements of neighbouring joints. For compound fractures, débridement is recommended as even more useful in civil than in military surgery. Plating operations and bone suture are rarely to be resorted to. A useful table of the methods of fixation to be used in injuries of the various regions is appended to the third chapter. In this the Thomas splints occupy an important place, as was to be expected. There are 16 chapters on fractures and dislocations of the various regions of the body. Each chapter begins with a consideration of the normal anatomy of the part, illustrated by a plate or plates from standard works on anatomy, and followed by a discussion of the nature and mechanism of the injury and a statement of general principles as applicable to that particular region. The evidence of X ray plates is largely relied upon for diagnosis. The method of treatment which has been found most successful by the authors is then described. Few if any statistics of the relative frequency of different fractures and dislocations are included. The subject of dislocations is treated perhaps too briefly, little stress being laid on their anatomical varieties or on the various methods appropriate to their relief.

A severely practical tone is adopted throughout the book, which is copiously illustrated, largely by photographs and reproductions of X ray plates. The illustrations of cases undergoing treatment by traction, splinting, and other methods leave much to be desired, as is so often the case in books of this sort. It is no doubt desirable that the actual treatment used should be accurately represented, but the mass of irrelevant details which assert themselves in a photograph to the obscuration of more important matters, could well be spared. Diagrammatic drawings faithfully representing the essentials of the photographs would be more valuable as a means of instruction to the reader. We commend the suggestion to the authors for adoption in the second edition, which will no doubt soon be wanted, for the book should make a wide appeal.

SIDE-LIGHTS FROM THE NEW PSYCHOLOGY.

By EVELYN SAYWELL, L.R.C.P., L.R.C.S. Edin. London: The Scientific Press, Ltd. 1924. Pp. 100. 3s. 6d.

THIS book, addressed to nurses, gives enough of the essentials of modern psychology to help in the understanding and handling of nervous patients and children. It follows to a great extent the teachings of Jung and suffers from that avoidance of difficulties which seems inevitable in books of this nature, though the author is perhaps right in thus making easy the path of the reader. Her separation of psycho-neuroses into central nervous system types and sympathetic nervous system types, however, would have been simpler and more in accord with clinical observations if she had applied it to symptoms and not to patients. There is little attempt at instruction in formal psychotherapy; in fact, Dr. Saywell leads up to the conclusion that the psychological aim of nurses and parents should be to look after their own ideas and adaptations before accepting the responsibility of guiding children. In the handling of a nervous child the treatment of the parent is often the first necessity, and for such an occasion there are some home truths on p. 73, beginning with a reference to "the deadly power possessed by the adult for hindering the development of children. . . ." It remains doubtful whether the method of self-analysis described on p. 94 can produce results. This is a useful little book; it is a pity that the title gives no indication of its nature and aims.

INSTINCT, INTELLIGENCE, AND CHARACTER.

By GODFREY H. THOMSON, Ph.D., D.Sc., Professor of Education and Head of the Teachers' Training Department, Armstrong College, Newcastle-on-Tyne. London: George Allen and Unwin. 1924. Pp. 281. 10s. 6d.

THE lectures that make up this book were delivered by the author as Visiting Professor of Education at Columbia University, New York City, and they embody what is most useful in psychology as applied to education. Stimulating rather than dogmatic, the author nevertheless rarely leaves us in doubt about his own views, which are freely supported by experimental results, though full weight is given to those theories that are incapable of experimental proof. The reader will, apart from the technical aspect of the subject, obtain a sound idea of the progress that psychology has made from the purely intellectualist standpoint of Herbart to the study of sentiments and instincts from the psycho-analytical point of view. The subject is made interesting and intelligible to the general reader without any sacrifice of range or accuracy; success of that kind is rare in a book on psychology, and this work should find a circulation beyond those whose interests as educationists lead them to read it.

THE MEDICAL ANNUAL, 1925.

A Year-Book of Treatment and Practitioners' Index. Bristol: John Wright and Sons, Ltd. 1925. Pp. 600. 20s.

THIS well-known annual, which now appears for the forty-third time, will be as welcome as ever. Almost every member of the medical profession should find it of use. To some it is the means of keeping them abreast of recent knowledge when time and leisure do not permit of more than a rapid glance at the medical weeklies, while to others it will be the reference book which enables them to turn up original papers on particular subjects, a sort of card index of the year's progress. As usual, the editors, Dr. Carey Coombs and Prof. Rendle Short, contribute an introduction in which they survey the tendencies of contemporary medicine. They refer to recent work on the injection of foreign protein for certain disturbances such as migraine, epilepsy, and asthma; to the administration of chlorides in tetany; to the surgical invasion of the field of cardiology with the operations for angina pectoris. At the same time they discuss the trend of opinion on subjects which have been described for the first time in previous editions. For example, they point out that massive doses in radiotherapy appear to be on the wane, that hilus shadows are beginning to be looked upon with suspicion, and that thoracic surgery continues to develop. As usual, this volume contains many excellent plates, and new ones include two of wax models prepared from cases of typhus. The publishers announce that a general index for the ten years 1915–24 will shortly be ready.

SIR EDWIN CHADWICK.

By MAURICE MARSTON. London: Leonard Parsons, Ltd. 1925. Pp. 186. 4s. 6d.

IN a small volume of 186 pages, one of the "Road-maker Series," Mr. Maurice Marston has retold, concisely and clearly, the story of Sir Edwin Chadwick's battling for reforms in sanitary and Poor-law administration during the mid-nineteenth century period. An account of his "life and doctrine" appeared in THE LANCET in lecture form on April 19th and 26th, 1924, and it is unnecessary to relate at length the details of his contest for his "sanitary idea" against indifference, apathy, and even the actively hostile opposition of obscurantist and enraged bumbledom.

Mr. Marston, in seven chapters, traces the evolution of reforms in the Poor-law, in public health, and in the factory system, inspired by Chadwick, to the influence which the utilitarian radicalism of his master, Jeremy Bentham, had upon his apt and willing disciple. He claims that Bentham imported principle into legislation by creating a creed, and that while he overthrew paternalism he gave undue regard to *laisser faire*. We are not sure that the author's political predilections may not have gone too far in claiming that Chadwick, as Bentham's pupil, "connected individualism with collectivism" or the beginnings of socialism. Anyway, to Chadwick must be attributed the inauguration of central control and inspection in matters of sanitation, factory life, and Poor-law administration; and while the interests he offended and the incompetents on whose toes he trod hounded him from office in 1854, he survived till 1890 to see "the multitude make virtue of the faith they once denied," and to enjoy the encomiums of Lord John Russell, of Gladstone, of John Stuart Mill, of Florence Nightingale, and of the great Lord Shaftesbury. According to the last named, the antagonists of Chadwick included the Parliamentary agents, the civil engineers, the College of Physicians, the local authorities, the Treasury officials, the water companies, and the Commissioners of Sewers—a truly formidable combination. Yet the judgment of history is that of Sir John Simon, who, in his "English Sanitary Institutions," declares that the public health reforms of the early Victorian epoch were "directly due to the labours of one eminent public servant, Sir Edwin Chadwick." Having claimed his hero as a collectivist, an anti-capitalist, or even a socialist, the author, in his final chapter, calls Chadwick a "reactionary." The charge is based upon his attitude towards bacteriology; yet even the latest developments of that science are emphasising the potency of soil in relation to the seed, and the influence of environment in the warfare against disease. There is still much to be learnt from the old sanitarians, of whom Chadwick was the foremost and the greatest.

The book of Mr. Marston's is ably put together and forms a worthy addition to an attractive series of biographies. We think the author is mistaken in stating that Chadwick stood as a Parliamentary candidate for the University of London, and in 1848 he was made a Companion—not a "Commander"—of the Bath. It was not until a year before his death, at the age of 89, that he received the K.C.B. Recognition of his services was tardy and grudging, but all can agree with Mr. Marston that "now that we are in a position carefully to examine his work and his

ideas it is possible to estimate how much gratitude the country owes to the man who left a profitable career at the Bar for an unremunerative position as administrator of reforms for the public welfare."

ELEMENTARY MORPHOLOGY AND PHYSIOLOGY.

For Medical Students. By J. H. WOODGER, B.Sc., Reader in Biology in the University of London. London: Humphrey Milford. Oxford University Press. 1924. Pp. 528. 12*s.* 6*d.*

THIS useful and interesting volume differs from many handbooks for the commencing medical student by the wideness of its outlook—even psychological as well as anatomical and physiological—and by the comparatively small space assigned to the usual "types" and their structure. It can be read, therefore, by anyone possessing some knowledge of fundamental biology, as well as by the intending candidate for the preliminary scientific examinations at the outset of a medical career. The student must expect to have to study as well as this book one or more practical text-books such as the late Prof. Milnes Marshall's "The Frog," where all necessary details concerning that animal are to be found. With this warning the text-book before us may be recommended and, indeed, it needs no justification, so thorough is its elementary treatment of essentials. It may, perhaps, be a little difficult for the average beginner to read easily, but is well worth a little extra attention. A special feature of this text-book demands appreciative notice. The majority of the illustrations are original and have been drawn from the author's own preparations. Not only is this so, but other figures are from original sources and not mere replicas of well-known hackneyed illustrations.

FORENSIC MEDICINE AND TOXICOLOGY.

Forensic Medicine. By SYDNEY SMITH, M.D. Edin., D.P.H., Principal Medico-Legal Expert, Egyptian Government, Professor of Forensic Medicine in the Royal Schools of Medicine and Law, Cairo, &c. With an Introduction by Prof. HARVEY LITTLEJOHN, F.R.C.S. Edin., F.R.S.E., Professor of Forensic Medicine, University of Edinburgh. London: J. and A. Churchill. 1925. Pp. 498. 21*s.*

Lectures in Medical Jurisprudence. By WILLIAM NUNAN, B.A., M.D., Police Surgeon of Bombay, Professor of Medical Jurisprudence, Toxicology, and Mental Disease, Grant Medical College, Bombay. With an Introduction by Major-General A. HOOTON, C.I.E., L.R.C.P., M.R.C.S., D.T.M., I.M.S., Surgeon-General with the Government of Bombay. Bombay: D. B. Taraporevala, Sons and Co. 1925. Pp. 162. 5*s.*

WORKS on forensic medicine and toxicology by authors who have practical experience of these subjects in the East are always welcome. India especially and many other Eastern countries afford excellent opportunities for the study of these subjects, not only as regards the quality of the material available, but also the quantity. Further, each country provides special problems from a medico-legal aspect, so that records in writing of various workers serve to broaden our viewpoint of the subject. Probably the total number of deaths from arsenic in this country in a year would not be more than 20–30, whereas the deaths in India alone number hundreds in a year.

The first of these books is a most valuable contribution to the literature of the subject. Dr. Sydney Smith has dealt with his subject thoroughly, but concisely, so that the volume is of moderate dimensions. The fact that he has drawn largely from his own experience serves to render the book more valuable, and the copying of obsolete and often inaccurate statements from other books is avoided. The volume may be recommended to students and practitioners in this country, for although most of his material has been collected in Egypt, the legal procedure pertaining to this country is recorded. The work is divided into 28 chapters and 5 appendices, of which 21 chapters are devoted to forensic medicine and 7 to toxicology. Of the appendices the two more important ones deal with chemical analysis and the examination of weapons and projectiles, and the final appendix discusses some of the special problems of forensic medicine which occur in the East. The book is profusely and helpfully illustrated. That the index gives only the principal reference to the various subjects is to be deplored, since often secondary references are important. Dr. Smith is to be congratulated upon a work which is a survey and a treatise. Prof. Harvey Littlejohn has written a graceful introduction in which he points out Dr. Smith's good fortune in the possession of a medico-legal institute. He expresses the pious hope that one day London will possess a similar institute under the auspices of the Home Office, where all the necessary experts are housed under the same roof. Such an institution would greatly aid the administration of the criminal law, and would be of special benefit to the medical student.

The writer of the second volume, Dr. Nunan, has not only had great experience of his subject, but, like Dr. Smith, has been called upon to teach the subject to students. This work represents the publication of his lectures and makes no claim to be a treatise on forensic medicine. To obtain a real insight into the subject it would be necessary to read between the lines to a considerable extent. The average length of a chapter or lecture is less than ten pages of ordinary octavo, and each could be delivered in some 30 minutes. The material here included is sound, but insufficient in detail, and it is probable that Dr. Nunan's students receive a good deal of extra information when he digresses from his manuscript. Many important medico-legal subjects are not touched on, such as rape, divorce, identity of dead, professional obligations, malpraxis, examination of seminal stains, &c. One or two misprints occur and a few rather more important errors, such as the description of hæmin crystals as being whetstone in shape, and the statement that the guaiacum test will produce a blue colour with no coloured substance except blood. However, in the main the material, as far as it goes, is sound and is simply expressed. Dr. Nunan has had extensive personal experience, and is evidently a careful worker. The book is without an index.

MEDICAL PATHOLOGY AND THERAPEUTICS.

Traité de pathologie médicale et de thérapeutique appliquée. XXVII.: Diagnostics de Laboratoire. I.: Introduction, Méthodes Usuelles de Laboratoire appliquées au Diagnostic des Maladies. Par MM. les Profs. LETULLE et P. PRUVOST. Paris: A. Maloine et Fils. 1924. Pp. 730. Fr.60.

THE appearance of this volume marks a further step towards the completion of the great series devoted to medical pathology and therapeutics now appearing under the editorship of Prof. Emile Sergent. Therein are considered the general principles involved in the investigation of disease by laboratory methods. Few details of technique are given; it may be the intention to include these in a further volume, for, as it stands, this volume contains insufficient in the way of technical detail to make it of service to the laboratory worker, while it comprises much that cannot be of great interest to the pure clinician.

In almost every section of the volume there is evidence that the author could not quite make up his mind for whom he was writing. Apart from this fundamental defect, it is an amazingly good work; no branch of laboratory diagnosis escapes the notice of the author and many of the sections are exceptionally good. This is particularly so in regard to a number of matters which are usually dealt with rather casually in English works—and for this reason the volume should be of particular use to British workers. Moreover, the author has a keen eye for the non-essential, and never includes matter merely because

it has figured in books of the same sort in the past. Thus there are excellent sections on the anaerobes and the spirochætes, but only half a page is devoted to the staphylococci—after all, everything that matters about the staphylococci, so far as medicine is concerned, can easily be said in that space. One of the best sections is that devoted to the examination of the fæces; for some peculiar reason this particular line of investigation seems always to be more competently dealt with in French than in any other language. The section devoted to the examination of the blood by chemical methods serves to show the divergences between present-day French and English teaching in this respect. The very small extent of the section devoted to bacteriology will horrify that class of medical practitioners for whom the apotheosis of therapeutics is an emulsion of micro-organisms.

JOURNALS.

JOURNAL OF PATHOLOGY AND BACTERIOLOGY. Vol. XXVIII., No. 2. Pp. 133–396. April, 1925.—Experimental Soot Cancer, by R. D. Passey and J. Carter-Braine (London). An extract of soot consisting mostly of the ether-soluble bases is very efficacious in producing carcinoma of the skin in mice. Further fractionation of the preparation restricted the carcinogenetic factors to the higher boiling-point fraction.—The Influence of the Fat-soluble Accessory Food Factor on the Initiation of Soot Cancer in Mice, by R. D. Passey and J. L. Woodhouse (London). No perceptible effect.—Evidence that Anaerobes Tend to Produce Peroxide in the Presence of Oxygen, by J. W. McLeod and J. Gordon (Leeds). As in many experiments on the metabolism of bacteria, the quantities of substances involved are so small that it is difficult to reach certain conclusions, but evidence accumulates that anaerobes are anaerobic because they kill themselves with peroxide if oxygen is present. The peroxide is the natural result of bringing a reducing mechanism into relation with oxygen. All bacteria have reducing mechanisms of one kind or another; many protect themselves from the resulting peroxide by producing catalase as well.—Estimation of Urea in Blood by Hypobromite, by F. S. Fowweather (Leeds). Sufficiently accurate for clinical purposes as the author contemptuously says.—Factors Influencing the Flocculation Test for Syphilis, by H. F. Watson (Edinburgh). Fresh heated serum must be used and the results are obtained more quickly if the tubes are shaken.—Arthritic Muscular Atrophy, by A. E. Beryl Harding (London). The acute wasting of the relevant muscles in arthritis has always been something of a mystery; it certainly cannot be explained by disuse alone. The condition can be readily reproduced in rabbits in which an arthritis has been achieved by chemical trauma followed by streptococci.—The Growth of Branching Forms of Bacilli, by A. D. Gardner (Oxford). Long branching Y-shaped forms are found in the stage of rejuvenation of many bacilli (*B. coli*, typhoid, dysentery, cholera, &c.); they grow into normal bacilli at all three free ends simultaneously.—Adenomyoma of the Stomach, by M. J. Stewart and A. L. Taylor (Leeds). See THE LANCET, April 18th, p. 830.—The Investigation of Phytopathogenic Bacteria by Serological and Biochemical Methods, by R. St. John-Brooks, K. Nain, and Mabel Rhodes (London). The curator of the National Collection of Type Cultures has investigated a number of described species of bacteria supposed to cause plant diseases by the methods familiar to the human pathologist. They are readily grouped by these tests; some species fail to establish their individuality.—The Correlation Coefficients of the Urine with Special Reference to Cancer, by C. Powell White (Manchester). Nineteen quantitative determinations on each of 100 samples of urine, 50 from cases with and 50 from cases without cancer, provides the material on which the author exploits what seems to be a novel method of trying to find out which constituents of the urine are excreted together. Statistical crude and partial correlations show, e.g., that sodium and chlorine are associated with water while sulphate is not, that urea is correlated chiefly with creatinin, phosphoric acid, and potassium, &c.—The Renal Circulation Rate in Experimental Oxalate Nephritis, by J. S. Dunn, J. H. Dible, N. A. Jones, and B. A. McSwiney (Manchester). Within normal limits by the technique used.—Diphtheria Antitoxin in the Blood of Normal Horses, by A. T. Glenny (Beckenham). Many horses, but fewer in recent years, which have never been immunised show a certain amount of antitoxin in their blood, are resistant to comparatively large doses of toxin, and produce antitoxin exceptionally well; the source of infection has not been traced.—The Relation Between Dosage and Death Time, by A. T. Glenny (Beckenham). With diphtheria toxin the relation was found to be: (log no. of M.L.D.) (time in hours -10) $= 12$.—The Time of Combination of Diphtheria Toxin with Living Tissues, by A. T. Glenny and Barbara E. Hopkins (Beckenham). A Schick dose of toxin given intradermally will produce its effect even if 10,000 times its equivalent of antitoxin is injected intravenously 15 minutes later.—The Antigenic Effect of Intravenous Injection of Diphtheria Toxin, by A. T. Glenny and C. G. Pope (Beckenham). More effective than has been supposed.—The Combining Power of Diphtheria Toxin and Toxoid with Antitoxin in Relation to their Antigenic Efficacy, by A. T. Glenny, C. G. Pope, and Hilda Waddington (Beckenham). The authors traverse much classical ground in the light of recent knowledge of skin testing by Schick's method and of Ramon's method of in vitro titration of toxin and antitoxin. The flocculation method gives for the first time a measure of the combining power of a mixture of toxin and toxoid, and it is this that has the nearest relation to antigenic value. Toxin made almost atoxic by treatment with formaldehyde is highly efficient in causing an animal to produce antitoxin.—The Effect of Serum-Sensitiveness and Precipitin Formation on the Efficacy of Diphtheria Toxin in Promoting Antitoxin Production, by A. T. Glenny, Barbara E. Hopkins, and Hilda Waddington (Beckenham) is dealt with editorially in our present issue.—The Titration of Diphtheria Toxin by the Flocculation Method, by A. T. Glenny and U. Wallace (Beckenham). The fact discovered by Ramon that mixtures of diphtheria toxin and antitoxin flocculate at the neutral point makes it possible to evaluate the strength of a toxin or antitoxin in a few hours without using any animals. In some cases a second zone of non-specific flocculation occurs.—Immunological Notes with Special Reference to Diphtheria Toxin and Antitoxin, by A. T. Glenny, C. G. Pope, Hilda Waddington, and U. Wallace (Beckenham). Individual guinea-pigs vary a good deal in their response to an antigen; young animals are less readily immunised than older ones and the route of injection and dilution of the injecta make differences. The antigenic power of toxin modified by formalin to the atoxic condition is improved by the addition of traces of fresh toxin. Modified toxins retain a little of their antigenic power after boiling. Very small doses of toxin may satisfactorily immunise a guinea-pig.—Group and Specific Agglutination, by F. W. Andrewes (London). The author showed previously that cultures of organisms of the Salmonella group consist of two sorts of bacteria sharply distinguishable by their agglutination reactions; in the one specific properties predominate, in the other the properties of the generic group. By absorption tests he now confirms this distinction and measures the amounts of the two agglutinable substances; in the group phase the specific element may be about 1 per cent. of the whole, in the specific phase the proportion of group elements may be even less. The facts are of fundamental importance in the identification and classification of bacteria by these methods.—The Pathological Classification of Goitre, by G. Scott Williamson and Innes H. Pearse (London). A new classification and interpretation of the various anatomical derangements of the thyroid, based on the

authors' views of the structure of the gland and its functional changes, which cannot be summarised; all interested in the thyroid should study the original.—Ruptured Aneurysm of the Basilar Artery at Age 17, by J. B. Duguid (Aberdeen). Arteries apparently normal, no syphilis.—Unusually Large Cardiac Aneurysm, by T. Shennan (Aberdeen).—Case of Multiple Cystic Liver, by C. R. Burns (Otago). Without the usual cystic disease of the kidney.—Carcinoma of the Jejunum, by P. P. Lynch (Otago).

THE NATIONAL PHYSICAL LABORATORY.

THE report of the National Physical Laboratory for the past year is a volume of 220 pages devoted mainly to accounts of the researches in progress at the laboratory. The opening pages contain the report of the Executive Committee, which is a general survey of the work undertaken and indicates lines of future investigation. It states that the past year has been one of good work and progress. Work for the Service Departments has been maintained on approximately the same scale as in previous years, while there has been an increase in the tests and investigations undertaken for business firms. The need for new buildings has again been pressed. Obviously the pressure of external requirements should not be allowed to interfere with the fundamental research and standardisation work of the laboratory, and it is therefore gratifying to note that the erection of a portion of the new Physics Building will begin this year.

Work in Various Departments.

The main portion of the volume is devoted to the reports of the various departments of the laboratory. These deal with researches and tests in all branches of physical science. The report of the superintendent of the Physics Department, Dr. G. W. C. Kaye, is perhaps of more immediate concern to the medical profession. The number of clinical thermometers tested was 698,665, a slight increase on the figure for the preceding 12 months, the quality of the instruments being well maintained. It was found that thermometers made of soda glass were more likely to develop defects than those constructed of lead (or Jena) glass, and a clause specifying the nature of the glass used for clinical thermometers has therefore been inserted in the regulations. A quick and simple method of distinguishing between soda- and lead-glass instruments is by X ray examination.

In the *radiology* section the number of radium preparations tested was 111, whilst protective materials dealt with numbered 155. It has been necessary to duplicate the apparatus for testing, by the alpha-ray method, the feeble radio-activity of mineral waters and low-grade ores. The number of X ray installations examined was 30 as against 27 for last year. The X ray departments of a number of hospitals have been inspected, and a marked improvement in the construction and in the protection afforded by new X ray apparatus is recorded. Research work is being continued on the all-metal vacuum pumps. It is hoped to modify the annular jet pump with a view to its operating against higher back pressures than 1 mm., a disadvantage in the existing models. In parallel with high vacuum research, preliminary experiments with large cathode X ray tubes have been carried out to determine the design of an X ray tube capable of taking heavy currents and of withstanding increased potentials. A research on the absorption and scattering of gamma rays has been carried out under the direction of Dr. A. E. Owen. Additional standard radium solutions have been made and data have been obtained regarding the absorption of gamma rays and the corrections which have to be applied to the observed radium content of radio-active solutions when measured by the gamma-ray method.

The work on *X ray protection* in association with the X Ray and Radium Protection Committee has been continued. Tests to determine the variation of the lead equivalent of protective materials with the wave-length of the radiation have been made. It was found that whilst the variation was inappreciable for lead glass and lead rubber, it might be considerable for materials such as barium plaster, and the report lays stress on the importance of stating the voltage at which the lead equivalent of a protective material is required.

Dr. Kaye reports that a considerable amount of work has been completed in connexion with *hygrometric measurements*. At the instigation of the Food Investigation Board, the behaviour of various materials when used as substitutes for hair in hygrometric instruments has been studied. An apparatus has also been constructed in the department for producing an air stream of a definite humidity, based on the fact that the aqueous vapour pressure over a solution of calcium chloride is a function of the concentration. The widespread interest in humidity control may be gauged by the fact that the department had inquiries for information from the industries of cotton, woollen, silk, tobacco, laundry, chocolate and confectionery, leather, fruit and egg storage, fish preservation, and mining.

Research in *sound* has been somewhat hampered by the lack of adequate accommodation. Nevertheless, progress has been made and preliminary measurements on the acoustic absorption of large-scale specimens have been carried out. The technique has been mastered of the photography of sound by the spark method and of water waves by the ripple tank method, the latter having already been used in connexion with the designs of the proposed new Parliament House at Belfast.

The *Electricity* Department, working in conjunction with the Industrial Fatigue Research Committee of the Medical Research Council, have carried out experiments to determine the relation between illumination and the accuracy and speed of working portions of linotype machines and of compositors' frames in a large printing works. The preliminary investigation showed that experiments cannot be conveniently carried out under actual working conditions, and it is proposed to undertake an investigation under laboratory conditions.

Research work for the *Dental Research* Committee of the Department of Scientific and Industrial Research has been continued in the Metallurgy Section. The alloys of the silver-tin system have been investigated and the results show that the constitutional diagram previously published for these alloys is incorrect. A beginning has also been made with the study of the silver-mercury system, dealing in the first instance with alloys rich in silver.

Projected Extensions.

Plans for the building and equipment of a high voltage laboratory have been developed and tenders have been invited. The proposal is to build a plant capable of giving 600,000 volts three-phase and 1,000,000 volts single-phase current. The behaviour of the newly erected plant for 1,000,000 volts in Paris has been of material help in coming to a decision as to the size of building necessary for the purpose. In the scheme of research for the present year, the Electricity Department will make measurements of very small amounts of power, one watt or less at several thousand volts, and comparison of the different methods of carrying out such measurements will be made. Work on the use of water resistances in the attempt to obtain reactance-free resistors, especially for high voltages, is also contemplated. For those using X ray plants the results of these investigations will probably be of considerable value.

The reader will find the report sufficiently detailed to allow him to understand the object of the various researches, the methods adopted, and the results so far obtained. The volume is indeed a valuable contribution to scientific literature.

THE LANCET.

LONDON: SATURDAY, MAY 9, 1925.

THE ISSUES BEFORE THE ROYAL COMMISSION ON HEALTH INSURANCE.

THE mass of evidence already laid before the Royal Commission on National Health Insurance is enormous—it is stated to exceed one million words—and it has been our care to summarise this evidence from week to week for the information of our readers. Certain broad issues are emerging, and a note on these may appropriately appear at a time when the representatives of the medical profession are giving their evidence before the Commission. The printed statement which Dr. R. A. BOLAM and his colleagues are expounding to the Commission is given in a very condensed form on another page. The emphasis and amplification of that statement, as Dr. H. B. BRACKENBURY reminded the members of the conference held at Westminster on March 12th, must be entrusted to those who sit in the witness chair and answer the questions of members of the Commission. We hope in due course to give a résumé of the oral evidence so taken. It is in any case important to remember that the proposals on behalf of the profession, considered as a whole, are rather an indication of the lines on which a national health insurance scheme should go forward than a suggestion that they are immediately practicable, financially and administratively.

Let us deal first with the big question whether the dependants of the insured are to be dealt with under an insurance scheme. The evidence of the approved society witnesses fails to reveal any clear demand for such a drastic step at the present time, although the principle receives a very wide blessing, and it is felt that the dependants are not receiving adequate treatment—a fact which more than one of the speakers at the conference of medical representatives was prepared frankly to recognise. Opinion in the medical profession on the question of the inclusion of dependants in the insurance scheme is divided, with the result that the evidence on their behalf is in the nature of a compromise. No one is likely seriously to quarrel with the first fundamental principle set out in that evidence that the medical provision under the National Health Insurance Acts should be available only for those persons who would be unable to obtain it without the help of the insurance scheme. And it is well to let it be known, through the Royal Commission, that, in conformity with that principle, the general practitioners of the country are prepared to provide a medical service for the dependants of insured persons below a certain income limit. But, frankly, it seems to us that the application in practice of an income limit for manual workers, who constitute the vast majority of the insured population, is full of the difficulties which were set out by Mr. E. B. TURNER at the conference to which we have referred. These difficulties were, we believe, felt to be insuperable in 1911, and there is little reason to suppose that the authorities would find them any more ready of solution at the present time. The Insurance Acts are hardly likely to be revised so as to apply an income limit to the insured persons themselves when they are engaged in manual labour, and the question, so far as the dependants of the insured are concerned, will almost certainly, therefore, be found to be that of treating all or none. A scheme for the treatment of all the dependants at the present time is not, we believe, within the region of practical politics.

Witnesses before the Royal Commission have been very definite in deprecating any increase in the weekly insurance contributions, and any remote possibility of such a step for purposes of health insurance developments has disappeared with the introduction by the Government of a contributory scheme of pensions to include widowed mothers and orphans. Developments under the National Health Insurance Acts must, therefore, be found within the existing finances of the scheme. The valuation results which have been recently declared show, we are given to understand, surpluses considerably exceeding those which were revealed in the 1918 valuation. The societies which are fortunate in the enjoyment of these large surpluses have been unanimous in displaying reluctance to any system of pooling, whereby the less fortunate societies can participate in the additional benefits which will flow as a result of these surpluses. The objections of these societies to pooling arrangements can quite well be understood in view of the emphasis which was laid in 1911 on the opportunity which societies would have in selecting members, and on the facilities which would be afforded to insured persons to join societies for their own particular trades and occupations, and generally to enjoy freedom of choice in the selection of societies. Moreover, the societies were to enjoy the fruits of their good management. He would be a particularly bold man who would claim as due to good management the very substantial surpluses now being declared. Societies, presumably recognising that there are other factors in the situation, have in most cases intimated their willingness for some extension of the scope of medical benefit to be of a national character, a portion of the funds being set aside for this purpose, thus in effect reducing the possibility of large future surpluses. The new benefit for which there is almost an insistent demand is a national scheme of dental treatment. It will appear from the evidence of the British Dental Association and other dental bodies, which we shall shortly publish, that the dentists feel equal to maintaining a national service. Inasmuch as there is great force in the argument that a service which would leave a large part of the dentist's bill to be met by the patient would fail just where the most needy members of the community are concerned, nothing less than a complete service free of cost to the patient could well be considered by the authorities. The estimates of the cost of such a service, which vary from 5*s.* to 6*s.* 6*d.* per insured person, seem to be based on a wholly insufficient volume of experience. In particular, the suggestion in the British Dental Association's evidence that the demand rate would appear to be 5 per cent. of the persons entitled to the free treatment appears to us to be quite inadequate when considered in conjunction with the picture which is drawn of the unsatisfactory state of the mouths of the people of this country. It may well be that an extension of medical services in the direction of consultant and specialist treatment and the provision of clinics and laboratory facilities for all of which there is a substantial, though secondary, demand from those who speak for insured persons, may prove much more susceptible of realisation than the more costly scheme of dental benefit. The inclusion of antenatal and maternity services within the scope of medical benefit to the extent

recommended in the evidence of the medical profession should also be capable of realisation within the limit of the funds available.

Reviewing the position as a whole, we are forced to the conclusion that until the official witnesses are again before the Commission to demonstrate, as we presume they will be called upon to do, which of the numerous proposals are possible of fulfilment, judgment must to some extent be suspended. We may at least, however, congratulate the medical profession on having their case so skilfully handled as it is in the document which is being expounded this week to the members of the Royal Commission. For the rest, as we have said, we must wait for some further indication of what is financially and administratively practicable, and the official evidence, at least, is likely to be prepared in the fierce light and the chilling atmosphere of finance.

THE RECEDING CHIN.

ORTHODONTICS, or the treatment of irregularities of the teeth and jaws, is a comparatively modern development of dental science. It has made great strides and is attracting an increasing amount of attention from dentists. Much ingenuity has been devoted to the construction of delicate appliances for correcting irregularities of the teeth. Much attention has been given to the many complex factors concerned in the ætiology and pathology of irregularities of the teeth and jaws. The type of irregularity associated with the receding chin is characteristic and easily recognised. It is customary to group irregularities of the teeth in accordance with the deviation from the normal occlusion of the teeth when the jaws are closed. The normal occlusion is such that each tooth interdigitates with two other teeth in the corresponding jaw. Thus, the lower first molar normally meets both the upper first molar and the upper second premolar, and so on. In effect, all the mandibular teeth are slightly in advance of the corresponding upper teeth. The typical superior protrusion of the upper incisors and canines, which is accepted as the customary English type in the Continental comic papers, is generally associated with a normal molar occlusion. In contradistinction to this type of irregularity, there is a class of malocclusion in which the lower molars are posterior to their normal position. The lower first molar instead of meeting the upper molar and second premolar, meets the upper first molar and the anterior third of the upper second molar. Varying degrees are met with, but such a degree may be taken as the average extent of this irregularity. The remaining anterior teeth share in this displacement, with the result that the lower incisors instead of being just behind the upper incisors, occupy a place much posterior to the normal. This gap becomes accentuated by the lower lip getting behind the upper incisors and pushing them out. To a casual glance such a case may seem to be typically one of superior protrusion, but a closer study will reveal the fact that it is the lower jaw which is primarily at fault. The displacement of the lower teeth is not a local irregularity of the teeth in a normal mandible, but is due to a defect of growth of the bone itself. Since the chin is merely the anterior end of the mandible, together with its superficial soft tissues, it follows that in these cases the chin shares in the lack of growth and is on a plane posterior to the normal, thus giving to the facial contour that appearance of a receding chin which is popularly associated with feebleness of will-power. Technically, this irregularity is known as "post-normal occlusion," while in recognition of the fact that it is primarily a defect of mandibular growth it is often spoken of as mandibular retrusion.

Irregularities of the teeth are common and appear to be much on the increase. Of the various types of malocclusion, post-normal occlusion represents a considerable percentage of the cases met with in dental practice. The ætiology is obscure. A view which held ground for a long time, and still has its adherents, is that it follows on nasal obstruction which, in its turn, is chiefly due to adenoid vegetations. Latterly, there has been a tendency to seek its cause in some more deeply-seated defect of growth occurring at a much earlier period of life. A. KEITH and G. G. CAMPION[1] have suggested that both defective growth of the jaws and adenoid vegetations may alike be the expression of some deficiency of endocrine secretion. R. W. WEINBURGER[2] has suggested that the irregularity may be due to some antenatal condition. Certain it is that the irregularity may occur very early in life, long before the permanent teeth come into place, and when the mechanical effects of nasal obstruction could hardly become operative. Considerable success has been attained in its treatment, with results which are not only apparent in the arrangement of the teeth, but also in the alteration of the facial profile. By means of a special kind of plate it is possible to throw the lower jaw forwards so that the molar teeth meet in their proper position. At first only a habit of biting forward is induced, but gradually the new position becomes an anatomical one until a time arrives when the individual can no longer cause the teeth to meet in their original position. The sequence of changes which occur in bringing about this result have not been fully worked out, but it seems probable that actual changes occur in the ascending ramus and condyle. Such a result cannot be guaranteed in every case, but in a sufficient proportion of cases the improvement in appearance is so gratifying as to make the attempt well worth trying.

Since the handicap of resting under the stigma of weakness of character because of this defect of bone growth is very real, there is an additional reason for trying to remedy this irregularity of the teeth. Indeed, the social and economic aspect of post-normal occlusion may be more important than the purely dental aspect and affords, perhaps, the strongest justification for undertaking treatment. The individual of strong character, or who is favoured by fortune, may be able to survive the handicap of a receding chin, but to many a lesser person it must often prove a real hindrance in the stress of competition. Though it would seem highly irrational to correlate weakness of will with this physical defect, it would be rash to assume that there is nothing in this popular prejudice. Just as the adenoid child is thought to be stupid because he is deaf and eventually, because he is neglected, may actually become stupid, so the individual with post-normal occlusion, being regarded as weak, is treated as such and may end up by becoming what his fellows assume him to be. It is conceivable that if the view of KEITH and CAMPION is correct, that the condition may represent an endocrine deficiency, there might be a true correlation of mental defect due to the latter condition. Perhaps the true explanation of the widespread impression may go back to the beginnings of civilisation. The prognathism of primitive man and his ape-like forbears carried with it an appearance of ferocity. In time, as man became more civilised, this impression of animal

[1] Contribution to Mechanism of Growth of Human Face. Trans. Brit. Soc. Study Orthodontics, 1921.
[2] Internat. Jour. Orthodontia, 1918.

power associated with massive jaws became transmuted into an impression that a strong jaw represented strength of will and decision. It can be easily understood that the opposite condition of a receding chin should be assumed to represent an absence or diminution of those virile qualities of mental decision which unconsciously we have come to associate with a strongly marked chin.

INTERFERENCE IN IMMUNITY RESPONSES.

BY the laws of chance and human good fortune a man seldom has two infectious diseases simultaneously. But one attack by a parasite generally leaves his apparatus of immune response in a condition which is different from its natural state in the sense that it is more facile and more easily roused to action by a second invasion; the effect of one infection, in short, may last till he is subjected to a different one. And to have two infectious diseases at different times is very common. The question of their influence on one another has been a good deal debated and in general along two lines of thought. On the one hand, it is possible that an immunity mechanism which has had experience and practice in responding to, e.g., the typhoid bacillus, will, when subsequently stimulated by, e.g., the paratyphoid bacillus, respond better than it would if it had never experienced anything of the kind before. And how far the first antigen would influence the response to the second would presumably vary with their relationships; close alliance, such as typhoid and paratyphoid, would probably influence the second response favourably, while remote similarity, such as typhoid and diphtheria, might well be without any result. There are many animal experiments which show that this is so and non-specific immunisation can be realised in a variety of ways. In human experience there appear to be no quite clear facts, but the general resistance of urban, as compared to rural, populations when exposed to the same infections under the same conditions illustrates the same phenomenon. On the other hand, we have to consider what would happen if the body is stimulated simultaneously by two antigens. If the two are sufficiently unrelated, we should expect little or no mutual influence, on the assumption that the mechanisms aroused are not the same. But if the two stimulate the same cells in the body it might well be that the tissues, especially at a first attack and in an untrained state, might fail to respond as well to each as if they had had only one to cope with at a time; in other words, the two antigens might interfere with one another. Such interference is known with typhoid-paratyphoid vaccines compared with preparations containing typhoid bacilli only, though whether it is of any practical moment is doubtful, and an interesting case of interference between antigens which are seemingly more dissimilar than these bacilli is described by Dr. A. T. GLENNY, Miss B. E. HOPKINS, and Miss H. WADDINGTON in the last number of the *Journal of Pathology and Bacteriology* (vol. xxviii., p. 305). If a rabbit is injected with horse serum it forms horse precipitins in its blood; if it is injected with a mixture of diphtheria toxin and horse antitoxic serum it forms diphtheria antitoxin; if it receives the toxin-antitoxin mixture while it is forming precipitins in response to an injection of normal horse serum it fails to produce antitoxin. It might be thought that this was due in some way to both the injections containing horse serum, that the precipitin perhaps carried out of action the antitoxin and with it the toxin and the stimulus. That this is not the explanation is shown by the fact that if a rabbit is responding actively by precipitin formation to an injection of cow or goat serum, it equally fails to respond to a toxin-horse-antitoxin mixture by antitoxin production. Non-toxic preparations of diphtheria toxin act as good stimuli in rabbits by themselves without any mixture of antitoxic serum, but these toxoids are without effect in animals which are producing precipitin to horse serum. Presumably, therefore, the whole attention of the mechanism of response may be occupied by one antigen, and there will be no effective excitation if a second comes along at that time. It would presumably be a bad thing to catch diphtheria and tetanus within a few days.

FORECASTING THE MENTAL DEFECTIVE'S CAREER.

ONE of the responsible tasks falling upon certifying officers of special schools for the mentally deficient is that of estimating the probable future social adaptability of the children, and in particular the occupations for which they may be suited. In his presidential address, now reprinted, to the School Medical Officers' Group of the Society of Medical Officers of Health Dr. J. W. Fraser, of Hull, describes an interesting investigation he has carried out to determine "the value of intelligence tests in the prognosis of the future careers of mentally defective children." Four groups were distinguished—those employed and earning more than £1 per week, those earning less, those unemployed, and those in institutions. His figures show no definite evidence of relation between the intelligence quotient calculated at any one age and the after-career, but where the quotient was calculated for several years in succession, some relation has been established between its fluctuations and the after-history. Dr. Fraser is not unmindful of the fact that intelligence is by no means the only factor in success, but his conclusion, shortly summarised, is that in the case of boys, where there has been an average annual gain of half a year in mental age and a terminal intelligence quotient of 50 or more, if the character is stable, and there is some manual capacity, the prognosis for the future is fairly good. In the case of girls the figures are inconclusive because so many girls were kept at home and had to be reckoned as unemployed. Success in the case of boys was found to be more sure if they were allowed to leave at 14, and in the case of girls retention at school until 16 was a fatal bar to employment at a remunerative occupation. It may, of course, be suggested that it is usually the best cases who are released from school attendance at 14, the cases, therefore, who are more fitted for employment; but it is well known to all certifying officers that the retention of children in special schools until 16, which is legally compulsory, is a handicap against their obtaining employment, and it can only be justified where there is definite provision for older scholars in trade schools, which should preferably confer no stigma of deficiency upon their pupils. Dr. Fraser was much impressed by the fact that only 7 per cent. of his cases were earning enough to keep themselves, and very rightly urges the importance of the provision of more institutions in which each inmate should carry out profitable work proportioned to his capacity.

THE LATE SIR CLIFFORD ALLBUTT'S BEQUESTS.—Sir Thomas Clifford Allbutt, Regius professor of physic in the University of Cambridge, left estate of the gross value of £56,963. His will contained the following bequests: to the Fitzwilliam Museum, Cambridge, his portrait by Sir William Orpen, and on the death of his wife a quantity of antique furniture and drawings and paintings by noted artists, including Landseer, Crome, Romney, Rossetti, G. F. Watts, J. M. W. Turner, and Fripp; to Gonville and Caius College, Cambridge, three silver and gilt drinking horns or cups (known as Swedish cups), requesting that his name as donor should be engraved thereon; and, subject to private bequests, the ultimate residue of his property to Gonville and Caius College, Cambridge, for Clifford Allbutt Fellowships for medical research or otherwise for the benefit of the said College in the discretion of the Master and Fellows, provided that no part thereof be used for building; £50 each to the British Medical Benevolent Fund and the Medical Charitable Fund for the West Riding of Yorkshire.

Annotations.

"Ne quid nimis."

THE BATEMAN APPEAL.

WE have kept this appeal open because subscriptions have continued to come in, but they are arriving only by driblets, as will have been seen by the acknowledgments. We hope that before closing the appeal some total will be reached signifying to a more marked extent that the medical profession have realised how vitally important to their interests the revision of Dr. Bateman's sentence was. Dr. Bateman was found by a jury to have been guilty of malpraxis meriting a term of imprisonment. When the account of the case was published in THE LANCET it became evident that the issues had not been properly put before the jury, for such tragedies were known to have occurred previously with no question of malpraxis arising, while due value had not been given to the testimony of clinicians. The sentence was accordingly quashed. For the medical profession at large the situation was now seen to have been an extremely serious one, implying that a practitioner in the course of his duties might be involved in a trial where the verdict will lie in the hands of persons quite unable to appreciate what has happened. This is the situation in which Dr. Bateman found himself, while his extrication from it has left him a sorely damaged man. The costs of the appeal were largely defrayed by THE LANCET, and only a small further sum has been received as yet to indemnify him for the loss of practice, to say nothing of his mental anguish.

JEJUNOSTOMY FOR PERITONITIS AND OBSTRUCTION.

IN THE LANCET of April 25th we published a paper by Mr. Seton Pringle in which he advocated jejunostomy in certain cases of diffuse peritonitis. This paper was read before the Royal Academy of Medicine in Ireland and gave rise to an interesting discussion. Jejunostomy is a measure which has been employed for some considerable time now, but has never received very general recognition or been practised extensively, yet it would appear to be a valuable method of treatment in properly selected cases. Patients in whom the operation is particularly called for are those suffering from diffuse pelvic peritonitis, where the inflammatory process affects two regions of the alimentary canal—the pelvic colon and the pelvic coils of ileum. The result is that there is set up a paralytic ileus in the two places concerned. Mr. Pringle believes that the onset of death is accelerated by absorption from the distended bowel above the obstructed areas, especially by the absorption of toxic substances in the small intestine. If these can be drained away from the body, the natural immunity reaction of the patient may be just sufficient to pull him through. He therefore advises that when the abdomen is opened and serious diffuse pelvic peritonitis is found to be present, a high enterostomy above the level of the umbilicus should be performed as a primary procedure. In the past many surgeons who have adopted enterostomy as an adjuvant measure have performed it only when, after the original operation, the patient's condition has become progressively worse. Under these circumstances it is frequently found that the enterostomy does not drain away the intestinal contents, or only begins to do so after two or three days if the patient survives this period, when the need for such evacuation no longer exists. The operation under these circumstances has been performed too late, for the paralysis of the pelvic coils of the intestine has extended upwards to the previously unaffected regions. It would seem quite clear that jejunostomy, if it is to be performed in such cases, should be done at the first operation. It would certainly seem a method more advisable than the ileo-colostomy with cæcostomy recommended by Mr. Sampson Handley. This latter is rather a serious intervention in a patient suffering from such a grave illness.

The advisability of performing jejunostomy for intestinal obstruction is not so evident. Advocates of the method declare that lives will be saved by performing a jejunostomy through a small laparotomy wound without exploration of the abdomen in late cases of intestinal obstruction. Series of cases have been published in support of this view. Jejunostomy is certainly a valuable therapeutic measure when the obstruction is due to a local peritonitis, such as occurs after appendicitis, but it is doubtful whether it could be carried out in a large number of cases of mechanical obstruction, such as that by band, without disaster occurring. The danger run is that the constricted portion of intestine may become gangrenous and perforate into the peritoneal cavity. Although it is true that once obstruction is relieved by jejunostomy there is a tendency for the congested gut at the site of the obstruction to shrink and so be relieved from pressure, yet it would seem too risky to rely upon this as an invariable issue. In the discussion on Mr. Pringle's paper several surgeons related their experiences of the operation, and the general conclusion was that in early cases of septic pelvic peritonitis jejunostomy was a valuable therapeutic adjunct, but that when the inflammation had spread upwards to the abdominal cavity results were not likely to be good.

THE ROYAL ACADEMY.

THE 157th exhibition of the Royal Academy of Arts was opened to the public on Monday last and provided a large number of beautiful things for inspection. And these things are of high level, well arranged, and well hung.

We believe that there is no doubt among those whose official business it is to know that achievement in landscape painting has become definitely of a higher standard and of more varied scope in this country during the last 20 years or so, and there are notable pictures in this exhibition by Mr. George Clausen, Mr. Arnesby Brown, Sir D. Y. Cameron, Mr. Lamorna Birch, Mr. Rex Vicat-Cole, and Mr. Philip Connard which would do honour to any collection of contemporary art. It must also strike an ordinarily observant visitor, as presumably it has struck expert critics, that our general sense of colour as a nation has become larger and truer. Time was when the general idea, for example, of the colour of a nude was that it should be pink or brown, according as to whether the subject was young or old, fair or swarthy; and even in medical journals we have seen some ridicule expended upon that real vision of the artist which was attempting to bring before our eyes the infinite number of direct and indirect tints, reflections, and gradations which are revealed on the bare surface of the body, when subjected to the influences of environment. The man who should now suggest that a green shade suggested putrescence would not be thought funny; everyone would know that he was merely convicting himself of a lamentable lack of observation, and he would have the public against him instead of for him. We have learnt in recent times to see with far more accuracy, and to identify as the truth what we were wont to consider pictorial fallacies. Indeed, we can imagine visitors to the exhibition this year finding that in certain canvases the artists have given us what they think is as much as we are likely to be able to appreciate, and have to that extent defaulted from the real.

The medical portrait is a frequent feature at Academy exhibitions for obvious reasons. A fair number of medical men attain to official positions when a presentation portrait becomes inevitable,

and having done so, they have generally acquired the right to wear robes of a sort which by themselves would compel the artist to take an interest in the work. There are, however, this year only two or three pictures which come under the category. Among them is a portrait of Dr. Matthew Hay, by Mr. Charles Sims, one of Sir Humphry Rolleston, by Mr. George Henry, and one of Sir Donald MacAlister, by Mr. Maurice Greiffenhagen. The portrait of Dr. Matthew Hay is on the wall that bears the Sargent portrait of the Marchioness Curzon and Sir William Orpen's cryptic "Man versus Beast." The subject wears scarlet and puce robes to which the artist, as a brilliant colourist, has done full justice. The rather fixed gaze of the eyes is open to criticism, but it is a striking performance. Mr. Henry's presentation of Sir Humphry Rolleston is quiet and dignified. It is essentially a pleasant picture. A characteristic expression of the subject has been faithfully rendered, and the general effect of the dark blue robe is restful and yet important. Of a very different category is the portrait of Sir Donald MacAlister. This is a genuine *tour de force* in reds, only the face being shown and the shoulder line swathed in the scarlets and pinks of the Doctor's gown. The face is presented to us absolutely full, and the colouring is almost harsh in its boldness, while not a stroke has been inserted that does not in some way help to bring out the force and intellectual ability of the man. The picture has, of course, been painted by an artist who has had every opportunity of knowing his sitter personally; it is not entitled "A Presentation Portrait," and many would like to know what is to be its destination.

ARTIFICIAL UNILATERAL PHRENIC NERVE PARALYSIS.

THE difference between artificial and "natural" unilateral phrenic nerve paralysis is like that between an artificial and a "natural" pneumothorax. The artificial lesions are almost painless and free from discomfort, whereas when morbid conditions cause either phrenic nerve paralysis or a pneumothorax, the patient is in a parlous state. It is interesting to note in the paper published by Sir Charlton Briscoe in THE LANCET of Feb. 21st, that he finds that "most patients with phrenic paralysis are too ill for prolonged examination, and cannot tolerate the supine posture for any length of observation." The question may be raised: Is the phrenic paralysis per se or are the morbid processes causing pressure on the phrenic nerve responsible for the patient's critical condition? It is noteworthy in this connexion that artificial paralysis of one phrenic may not only fail to embarrass the patient, but may even relieve him of a sense of discomfort in the affected side by virtue of section of certain sympathetic filaments running in the phrenic. In a paper published by Dr. C. A. Perret, Dr. C. A. Piguet, and Dr. A. Giraud, in the *Presse Médicale* for April 11th, an account is given of the present position of artificial phrenic nerve paralysis in the treatment of pulmonary tuberculosis. Therapeutic experiments in this field have done much to throw light on the innervation of the diaphragm by the phrenic nerve. A few years ago the surgeons who performed simple division or resection of a short section of the phrenic in the neck were surprised to find how little the diaphragm was affected thereby. Subsequent investigations have shown that several nerve filaments may join the phrenic below the neck, and that if the phrenic is divided in the neck, and its distal end is pulled out slowly so that the filaments joining it lower down can be included in the resected portion, almost complete paralysis of the diaphragm ensues. This process, known as exairesis or evulsion of the phrenic, has been performed by the authors in two cases with considerable success, whereas they did little good in the three cases in which they performed simple phrenicotomy. In one of the cases in which exairesis was performed, and 15 cm. of the nerve was resected, the diaphragm was seen two days later to have ascended a hand-breadth and to be completely immobile. Yet there is no record of any great distress or pain, and, as Mr. H. Morriston Davies pointed out in THE LANCET of Feb. 28th, this freedom from pain and respiratory distress would seem to be the rule rather than the exception. Exairesis is evidently a valuable means, in carefully selected cases, of limiting the movements of the lung and thus giving it that rest which is so essential to the healing of tuberculous lesions. It is, of course, the basal lesion which is most suitable for this treatment, and it is well, as pointed out by the authors of the French paper to which we have already referred, that the disease should be of a fibrotic character with a natural tendency to healing.

THE HARVEY MEMORIAL AT HEMPSTEAD CHURCH.

FROM 1657 to 1883 the body of William Harvey lay in the vault of the Harvey Chapel in Hempstead Church, Essex, whence it was removed in 1883 and re-interred in a marble sarcophagus, provided by the Royal College of Physicians of London, within the church. It is now proposed to rebuild the tower of the church as a further memorial, at a probable cost of £5000, of which £450 have been contributed locally. The parish is small and chiefly agricultural, and it is hoped that laymen as well as the members of the medical profession will contribute. The old tower fell in 1882 and of the five bells the tenor was shattered; the other four escaped injury and are hung in the churchyard. The original tower was a four-sided edifice, somewhat severe in style, in four stories with a battlemented top and two windows with tracery. Times are hard and taxation is high, but medical men of all nations should feel it a duty to erect a tangible memorial of one of the great men of their profession, and we earnestly hope that the scheme may materialise. There is no need to emphasise at this date the importance of Harvey's discovery; suffice it to say that the whole of modern medicine depends upon it. And for those who are Churchmen the restoration of a church tower is an act of grace. Subscriptions may be sent to Dr. Sidney Phillips, Royal College of Physicians, Pall Mall East, to Mr. A. W. Ruggles-Brise, hon. treasurer, Spains Hall, Braintree, or to the Rev. T. P. Conyers Barker, Hempstead Vicarage, Saffron Walden, Essex.

PHTHISIS AND INDUSTRIALISM.

WE have already referred[1] to the first and second Harben lectures for 1924, delivered by Prof. E. L. Collis. The publication of these has been completed in the May issue of the *Journal of State Medicine*. The first two were devoted to determining whether, and, if so, in what way, the rise of industrialism in different countries has influenced the prevalence and age-incidence of phthisis. The lecturer claimed the influence to be profound and, from its study, looks upon the occurrence of the disease as a reflection of the existence of malnutrition in early adult life and wear-and-tear in later life. The third lecture deals with the question whether an alteration in age-incidence, such as has taken place for phthisis, might not be a manifestation exhibited when epidemics of infection wax and wane. The records of measles, enteric fever, whooping-cough, diphtheria, influenza, and particularly of scarlet fever are examined. Influenza provides evidence of an interesting occurrence: previous to 1918 the mortality from this disease had displayed a normal curve. Then suddenly, in 1918, the curve altered and came to possess a remarkable peak in early adult life coinciding with the peak for phthisis mortality which had been growing higher and higher at that period of life as food scarcity

[1] THE LANCET, April 25th, p. 880.

became more pronounced. The suggestion is made that the similar phenomena thus exhibited by the two causes of mortality occurring at the same time and under similar conditions had a common origin. Only in the case of scarlet fever is a definite move in age-incidence to later years of childhood found to have occurred in the past half-century, while the mortality both from this disease and from phthisis has been falling. When, however, the age-incidence of attack during the rise and fall of epidemics of this disease was closely examined (for this purpose five years admissions to the Glasgow Fever Hospital were employed), no evidence of any significant difference in age-incidence was found; in other words, no support was forthcoming for the view that the move over 50 years is epidemiological rather than social.

The evidence produced in this lecture is at best only evidence by analogy; it has clearly been collected at the expenditure of much time and trouble. But whether, if sound, it really helps to assure us that the fall in phthisis mortality is not a mere dip in a long wave which must inevitably rise again is doubtful. Prof. Collis clearly holds an optimistic view and seeks for foundations for his faith. Possibly others with access to other records will examine them and publish their results, for the matter is one of practical significance in efforts to eradicate tuberculosis. In any case, the effort shown in these lectures to interpret vital statistics in the light of social conditions is to be welcomed.

THE ALLEVIATION OF DEAFNESS.

IT is acknowledged by all otologists that the results of the treatment of chronic otitis media, otosclerosis, and nerve deafness have hitherto been disappointing. Only a few weeks ago Dr. J. Kerr Love,[1] President of the Section of Otology of the Royal Society of Medicine, said:

> "Outside of surgical treatment there has not been great advance in otology. We can hardly do more than we could do fifty years ago for the cure of deafness. We are only beginning to try to prevent deafness, and the consequence is that the management of chronic deafness is largely in the hands of the empiricist and the quack."[1]

Any new method, therefore, which afforded a chance of the improvement of chronic deafness would be welcomed. Up to the present the treatment of deafness by so-called re-educative methods has not been received with general approval by otologists either in this country or abroad. There have been, it is true, a few enthusiastic protagonists of the method, such as Dr. J. Helsmoortel, of Antwerp, who published in 1913 a pamphlet on his successful results, and Dr. A. Raoult,[2] of Nancy, who reported in 1913 good results in 35 cases. At a meeting of the Scottish Otological Society in June, 1914, the late Dr. W. G. Porter [3] reported favourable results in a few cases, but the outbreak of war left unredeemed his promise to report further. The method of treatment has laboured and labours under several disadvantages. When it was first introduced into this country it was in the hands of medically unqualified persons. The instrument most commonly employed, the electrophonoide, was sold at what appeared to be an extravagant price; though we are willing to believe that when the intricacy of the mechanism is considered the price is not an extravagant one. It is impossible to give a prognosis regarding the possible success with any deaf patient until a preliminary course of treatment has been undergone. Even after a full course of treatment the improvement in the hearing is not usually permanent; in favourable cases it may continue for two or three years, but more commonly, even according to its most enthusiastic advocates, it does not last for more than six to nine months, when a further course is necessary. The method has, therefore, had to bear such adverse comments as that of Dr. Dan McKenzie, that "the impression exists that in the camp of re-education the smoke of the incense burned to the Golden Calf is just a little too plainly discernible." Dr. A. A. Gray [4] has dismissed the electrophonoide method as negligible because of the results in three of his patients who were treated by it; in two there was no improvement, and in the third the improvement was so slight as to be of no importance. In this country the most important study of the method previously published has been that of Mr. F. F. Muecke,[5] who reported in 1914 that his experience with re-education had not been satisfactory. He treated 36 cases; one was cured (a case of neurasthenic deafness); in three there was definite improvement; ten improved but relapsed later; and 22 remained in statu quo.

The article by Mr. George C. Cathcart in this issue of THE LANCET has, therefore, some importance as being the first categorical summing-up in favour of this method of treating chronic deafness to be published in this country. The instrument he has employed is the "electrophonoide" of Mr. Zund-Burguet, who, we believe, is a teacher of the deaf in Paris. The principle of this instrument is explained in the article, and the treatment apparently consists in vibration of the tympanic membrane, vasodilatation of the vessels of the tympanic membrane and the middle ear, and stimulation of the nerve-endings in the internal ear, by vibrating ear-pieces which convey sounds corresponding to the registers of the human voice. Mr. Cathcart makes the very definite statement that of his 100 cases of chronic progressive deafness, selected only in the sense that each had been examined and dismissed as incurable by two or more fellow otologists, 68 per cent. have improved after treatment with the electrophonoide. Making every allowance for possible error, this is not a statement that can be gainsaid wholly by such a suggestion as that "the improvement in the mental condition is produced by such an imposing apparatus."[6] In face of Mr. Cathcart's figures and his restrained presentation of the case in favour of the method, the treatment of chronic deafness by mechanical "re-education" does indeed appear to deserve some serious consideration by otologists.

THE ENDOCRINE FACTOR IN CHRONIC ARTHRITIS.

EXPONENTS of the septic-focus theory of the ætiology of chronic arthritis can point to a long series of cases which have been markedly benefited, if not completely cured, by the removal of some hidden source of toxicity. Opponents of this theory can indicate an equally large army of sufferers who continue in the same condition despite ruthless extirpation of teeth, tonsils, appendix, and every other potential lurking place of bacteria. A possible reason for this discrepancy is put forward by Dr. A. K. Thompson in the *Boston Medical and Surgical Journal* of April 2nd. He points out that focal infection may lead directly to an arthritis, but that it may also produce an endocrine disturbance which causes joint affections in its turn. If this interference with the endocrine system has been induced, the removal of the primary focus will have no effect on the arthritic condition, which is maintained by the failure of the internal secretions. Various observers have noted the association between arthritis or rheumatism and modifications of the thyroid function, either of defect or of an incomplete Basedow's syndrome. Lancereaux and Paulesco have recorded remarkable success through the administration of thyroid in chronic rheumatism. Dr. Thompson divides arthritis into three groups. In the "isotrophic group" he includes all cases which are not manifestly atrophic or hypertrophic; for these the method of treatment

[1] Jour. Laryngol. and Otol., February, 1925, p. 110.
[2] Arch. Internat. de Laryngol. d'Otol., et de Rhinol., July–August, September–October, 1913.
[3] Jour. Laryngol. and Otol., September, 1914, p. 469.
[4] A. A. Gray, Otosclerosis, 1917, p. 165.
[5] Jour. Laryngol. and Otol., November, 1914, p. 524.
[6] Jour. Laryngol. and Otol., September, 1914, p. 470.

by removal of foci, immunisation, shock-therapy or medication, is firmly established. The atrophic group corresponds closely to "rheumatoid arthritis" and is the form most commonly encountered. A derangement in calcium metabolism is probably a potent factor. The vasomotor phenomena of this group have been associated by MacAlister with perversion of the thyroid, and there is, according to Dr. Thompson, distinct evidence of endocrine dysfunction, either hyper- or dys-thyroidism, or the presence of endocrine foci of sepsis. The hypertrophic group corresponds with what is usually known in this country as "osteo-arthritis," and signs of hypothyroidism have been noted in almost all cases. Metabolism is subnormal and there appears to be a hypertrophic diathesis with inability to disperse lime salts properly. The administration of thyroid extract is of particular value in this type of case. There are probably few chronic disturbances of the body which do not in some measure affect the endocrine system, but the therapeutic possibilities of Dr. Thompson's conception are of great interest to the practitioner. Any way of relieving, if not of curing, the painful and disabling joint conditions which are constantly being presented to him is worth serious attention and experiment.

HUXLEY.

Thomas Henry Huxley was born at Ealing on May 4th, 1825, and when he died at Eastbourne on June 29th, 1895, he had been for 20 or 30 years about the best known scientific man in England. With his many fundamental discoveries in zoology and with his many distinctions in other fields, the fact that he was a qualified medical man had little to do. The profession may, however, pride itself on the memory that almost the only regular teaching he ever received was as a medical student at Charing Cross Hospital—a memory revived annually in the Huxley Memorial Lecture—and that it was an appointment as a ship's surgeon in the navy which gave him his practical start in life and the chance of exploring the wonders of the ocean, which he did to such good effect that he was elected a Fellow of the Royal Society at the age of 25 and received a Royal Medal in the following year; in 1881 he became President.

Huxley was in the first place a distinguished comparative anatomist with a bent for philosophical generalisation, and at the same time a horror of letting his imagination run in front of the facts of structure which were before him. For 25 years he worked in that doubting period of biological thought when, among Lyell and Scrope's uniformitarianism, Cuvier's archetypes, Oken's idealism, and the accurate examination of structure by Johannes Muller and his companions, the world was groping its way to the realisation of the broad truth which Darwin drove home in the "Origin of Species." And in the cumulative development of knowledge which led up to the revolution of 1859 Huxley played a prominent part with such contributions as his recognition and delimitation of the Hydrozoa as a natural group and his work on the theory of the vertebrate skull. Once Darwin had provided a mechanical conception of how evolution worked, Huxley was persuaded where the philosophy of Lamarck and Herbert Spencer had failed to convince him. He became one of the most active protagonists of the new doctrine, and his own work, now largely palæontological, centred round it. In the second place Huxley was for 31 years an inspiring professor of natural history at the Royal School of Mines, and when he got facilities at South Kensington in the early seventies he introduced the method of practical class-teaching with types of animals and plants which has been everywhere imitated with such success. As a memorial it would have been appropriate if the "Huxley and Martin" of those early days had not been replaced so largely by the almost equivalent "Marshall and Hurst." And, in the third place, Huxley was a good citizen who felt it laid upon him to rebuke error and propagate truth, and the last third of his life was mostly occupied with his public duties. It is in some ways a little unfortunate that the general public knows him best by his controversial activities. He had a hatred of dogma and privilege and pretence which seems now rather over-fierce, and it is hard for us to be enthusiastic over his polemics with Mr. Gladstone and the Duke of Argyll about the literal truth of Genesis. He hit harder than is customary nowadays, and when he said that you could always remember which side of the heart the mitral valve was on by reminding yourself that bishops were never in the right, he had perhaps forgotten that his first paper to the Royal Society was communicated by the Bishop of Norwich. But our very difficulty in fully sympathising with his position simply means that he and his fellow workers in the cause of freedom of thought succeeded, and it is in large part their work which has led to the broad-minded toleration which makes such controversies impossible in this country—though not in America—at the present day. There was a time when Huxley's name could hardly be mentioned in genteel society; he was a declared agnostic and perhaps he declared it rather loudly. But in calmer days it is not difficult to see peeping out of his writings a rather wistful longing that the intellectual discipline which he had imposed on himself would let him believe a few things which he could not prove. "To do justly and to love mercy and to walk humbly with thy God" was his epitome of an ideal religion.

ONE HUNDRED OUTBREAKS OF FOOD POISONING.

FOOD interests everyone, whether admittedly or not, and food poisoning has a very particular interest. Early in 1921 the Ministry of Health invited the coöperation of the Medical Research Council in investigating outbreaks of food poisoning on lines arranged by the Ministry in consultation with Dr. W. G. Savage, medical officer of health for Somerset. The special report[1] before us gives a plain record of 100 consecutive outbreaks, taken without selection, the large majority of which occurred in the years 1921–23. The problems involved are numerous and complicated, and in spite of the special laboratory facilities provided at Weston-super-Mare and the collaboration of Mr. P. Bruce White working whole-time in the bacteriological laboratories at the University of Bristol, the main features of the subject have not essentially changed since Dr. Savage's report to the Local Government Board in 1913. The present report is practically confined to serious and extensive outbreaks of food poisoning, but only for the reason that records of slight outbreaks are scarcely ever published and are but rarely brought before the public health authority at the right time. On the one hand, the special laboratory itself suffers from the inadequate material sent to it. On the other, all the reported outbreaks of food poisoning are not necessarily such, even when so described in the verdict of a coroner's court. A miner, for instance, who died in the Bishop Auckland Infirmary with symptoms regarded as typical of botulism, was stated in the verdict to have died of poisoning probably caused by tinned tomatoes. Later inquiry elicited the fact that on the day previous to eating the tomatoes he had suffered from stiffness of the neck, which gradually developed into the classical picture of tetanus. Nevertheless, the case was widely circulated in the press as one of botulism. Four children taken ill in a Manchester family, three of whom died, were supposed to have been poisoned by tinned treacle. Evidence, however, pointed to death from some infection, the nature of which could not be fully determined. Idiosyncrasy plays but little part in

[1] Medical Research Council. Special Report Series No. 92. Food Poisoning: A Study of 100 Recent Outbreaks. By William G. Savage, M.D., B.Sc., and P. Bruce White, B.Sc. H.M. Stationery Office. 1925. Pp. 112. Price 2s. 6d.

food poisoning. Contrary to the common supposition that one man's meat may be another man's poison, Dr. Savage and Mr. White state quite definitely that in all the outbreaks they investigated the infectivity rate was high and in general all who ate the incriminated food were made ill.

Of the 100 outbreaks here recorded 66 were due to members of the Gaertner group of bacilli, which the authors now prefer to call the Salmonella group. Four others were due to the dysentery group, 8 were outbreaks of cheese poisoning, 7 of undetected bacterial origin. In no case was any strain of the colon bacillus found responsible for an outbreak. The Salmonella group, therefore, takes the lion's share in the attacks. Concerning the vehicle of infection, canned meat and canned fish accounted for 29 cases in which Salmonella toxins were the cause of poisoning, made-up meat for 10 and other forms of meat for 6 of the 28 cases in which the living bacillus was responsible. Bacilli, the report states, may remain alive but dormant in canned foods for indefinite periods. Great uniformity was recorded in the symptoms of bacterial food poisoning; diarrhœa, vomiting, and abdominal pain being very constant, eye symptoms quite rare. In outbreaks due to undestroyed toxin the attack follows rapidly, two to four hours, after ingestion and the acute effects may pass off within 24 hours or less. Case-mortality is low apart from the 100 per cent. mortality of the one recorded attack of true botulism at Loch Maree in August, 1922. The mortality from living Salmonella strain is put down at 1·2 to 1·3 per cent., although such attacks must always be considered potentially dangerous to life. Death from Salmonella toxin is much more uncommon. There was no death from the eight cheese outbreaks. Milk, although so favourable a medium for the growth of Salmonella bacilli, shows a singularly low case-mortality, less than 0·2 per cent., in fact. As to the path of infection, in outbreak after outbreak the authors could not get beyond the certainty of infection with Salmonella strain. They assert that there is no evidence that such bacilli are natural inhabitants of human or any animal intestines. Habitat outside the animal body, though possible, is mere hypothesis; and extremely few outbreaks of food poisoning in the literature can be ascribed with confidence to infection from a human source. All the available facts suggest contamination of food, originally bacterially sound, with bacilli derived from outside the food. Evidence was obtained of infection of brawn from the mould in which it was made, of meat pies from tank water, of cockles from contaminated sea water; but the authors frankly confess themselves as signally unsuccessful in obtaining proof exactly how and where the specific infecting bacilli originated. Rat or mouse is a possible source; the fly theory is unlikely inasmuch as flies are ubiquitous and multiple outbreaks of food poisoning never have occurred. Of 16 outbreaks of canned meat, of which the place of origin was obtainable, in all but one the meat was packed in South America.

The report concludes with an important section on the means for prevention; first and foremost diffusion of more accurate knowledge of the true nature of food poisoning, leading to careful epidemiological and bacteriological investigation. The authors have been profoundly impressed with the unsatisfactory way in which many cases and many small outbreaks involving a death have been investigated. It should be legally recognised, they think, that made-up meat-foods require special supervision and control; such foods, that is, as brawn, potted meat, meat pies, and sausages, every person carrying on such a business should do so under licence in premises where bacterial contamination is unlikely or impossible. An appendix to the report contains details of all the 100 cases, many of which are reported here for the first time. The report will be a revelation to many how frequent and serious are these outbreaks. The reader will hardly fail to gain the impression that they are avoidable.

THE COLLEGE OF PHYSICIANS IN PHILADELPHIA AND ITS MEDICAL MEMENTOES.

WE have received from Dr. W. W. Keen, the present custodian of a cabinet of medical mementoes now in the possession of the College of Physicians in Philadelphia, a pamphlet descriptive of the articles contained therein. The custodianship was founded by Robert Abbe, of New York City, an Associate Fellow of the College. Personal relics of great men, something which they have touched or worked with or worn or used, seem to bring us who live after them (though one of the articles in the cabinet was presented by a living donor, Madame Curie) nearer to the former owners than a picture or statue. The relics in question are the shoe buckles and watch of Benjamin Rush (1745–1813); an inkstand and a lock of the hair of Edward Jenner (1749–1823); a case of instruments used by Joseph (Lord) Lister (1827–1912), and some test-tubes of sterilised milk used by him in his earliest researches on fermentation, which, though exposed to the air, kept sweet for many years and are still unputrefied, though some are mouldy; a model of a crystal of tartaric acid made by Louis Pasteur (1822–1895); and finally a piezoelectrometer used by Madame Curie and her husband in their researches on radio-activity and presented by her. St. George's Hospital preserves with pride the hide of the cow from which Jenner took his first vaccine, and the Philadelphia College of Physicians may rightly boast of its possession of relics of scientific research of equal value. Dr. Keen, in a letter which we have received from him, asks for information about any articles of a similar kind belonging to William Harvey, André Vesalius, or Ambroise Paré, if such there be, as he is anxious, if possible, to add them to the contents of the cabinet.

DR. SAMUEL JOHNSON AND MEDICINE.

OF men of letters who have paid tribute to medicine not the least was Dr. Samuel Johnson, who numbered some of the most influential physicians of the eighteenth century, as well as some less distinguished, among his friends. An interesting account of Dr. Johnson's connexion with medicine and with those who practised it was given by Dr. Robert Hutchison at the social evening of the Royal Society of Medicine on May 4th, where he showed on the epidiascope a series of portraits of the lexicographer's medical friends. Although a victim of almost constant bad health, Dr. Johnson declared that illness was of little expense to him, thanks to the generosity of his physicians, a thought which he developed later into the statement that no estate had ever been raised by medicine. But Dr. Richard Warren, Lettsom, and Fothergill earned huge incomes—proportionately more than any physician earns to-day—therefore it must be supposed that not all distinguished patients paid their fees on Dr. Johnson's scale, who rewarded the services of Warren with a copy of "The Lives of the Poets." Johnson was fond of the society of doctors, and of the nine members of a little club he formed in 1749, three were medical men, one Dr. Richard Bathurst, "dear, dear Bathurst," "a good hater," and a "man after his own heart." Unfortunately, all three physicians came to a sorry end, but many of Johnson's later friends were most distinguished. Chief of them was Dr. Thomas Lawrence, a man of "strict piety and profound learning." William Heberden, "ultimus Romanorum, the last of the learned physicians," and Brocklesby, "a liberal friend." Johnson was, of course, acquainted with the illustrious Lettsom, who formed a very just opinion of Johnson's character—"not polite, but not rude, with a glance like lightning out of a dark cloud"; a more generous description than was given by Dr. William Cuming (one of the founders of the Royal Medical Society of Edinburgh), who described Johnson as "sententious, oratorical, and dogmatic, possessed of a feline malevolence—a most unamiable being."

That Dr. Johnson's own medical knowledge was not inconsiderable is not surprising in a man of such inexhaustible concern in all human affairs. Much of his medical lore was gained from Dr. James, the originator of James fever powder and the author of a medical dictionary, in the compilation of which Johnson assisted. And doubtless he picked up a good deal from his servant and companion, Robert Levett, who had been a waiter in a French coffee-house until some friends subscribed money to enable him to attend medical lectures at St. Bartholomew's Hospital. Levett was practising among the poor when Johnson met him in 1746, and his fees were often paid solely in bacon and gin. Johnson's medical views were surprisingly modern; he was a teetotaller in a hard drinking age and condemned polypharmacy in all its forms, although he was fond of prescribing for himself and for his friends—also perhaps a modern trait. On medical ethics he expressed opinions which he was well qualified to give, and fulminated against snap-shot diagnoses. Though he held that a patient should be told the truth on all occasions, he did not always like to hear it himself, but in his last illness he insisted that nothing be hid from him. He must have been a trying patient to nurse, yet he never feared the surgeon's knife; when Cruikshank the surgeon scarified his legs for dropsy, Johnson, considering the cuts were not deep enough, dug a pair of scissors into his calves, saying to Percivall Pott, "You would not have me, for fear of pain, perish in putrescence." Dr. Johnson had himself, the lecturer said, the necessary qualities of the physician; the lame, the halt, and the blind found a refuge in his house, although it must be admitted he had hardly the bedside manner. At the close of the lecture, the President, Sir StClair Thomson, asked Mr. Augustine Birrell, who was present, to propose a vote of thanks to the lecturer. Mr. Birrell, in a vivid speech, inspired by his love and admiration for the subject of the paper, said that having seen the portraits of these eighteenth-century physicians, he wondered that Johnson's life had not ended prematurely. The amazing thing about Johnson was the interest he aroused in all men—people talked about him during his life, were talking about him still, and would go on talking about him.

THE fund inaugurated a year ago to perpetuate the public services of the late Sir Malcolm Morris has now been closed and the money allocated in providing a bi-annual prize at St. Mary's Hospital, Paddington, to the final year's student best qualified in dermatology, and in endowing an annual public lectureship under the Chadwick Trust upon the preventive aspects of public health and upon dermatology in alternate years.

HUNTERIAN SOCIETY.—A Dinner Meeting of this Society will be held at Simpson's Restaurant, Cheapside, on Monday, May 11th, at 7.30 P.M. After dinner, at about 8.30 P.M., the annual general meeting will be held. When the business of the annual general meeting is concluded Mr. Morley Roberts will read a paper on the Life of Dr. Henry Gawen Sutton.

AN AMERICAN HEALTH CONGRESS.—In order to give health workers from every part of the United States of America a general view of the public health movement in its broadest aspects, the National Health Council at 370, Seventh-avenue, New York City, has organised an American Health Congress to be held at Atlantic City during the week ending May 22nd, 1926. Leading authorities on each phase of the public health movement, such as tuberculosis, cancer, heart disease, blindness, social and mental hygiene, public health nursing, preventable diseases, and positive health education for both children and adults, will present the latest and most authoritative findings and programme for the solution of these problems. In addition to the various associations under the National Health Council it is anticipated that leading health associations of Canada, Mexico, and elsewhere will coöperate in this congress.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CXXI.—THE TREATMENT OF EXCESSIVE LOSS AT THE PERIODS.*

II. When the Uterus is Fibroid, Normal in Size, or Undersized.

Fibroids.—Fibroids cause excessive loss at the periods, partly by increasing the size of the menstrual area, partly by augmenting the vascularity of the uterus, and partly by interfering with the retractility of its muscular wall. The amount lost bears no constant relation to the size of the tumours. One feature of fibroids is, however, pretty constant—namely, that they prolong menstrual life until well over 50 years. This is an important point to be considered when advising treatment. Menorrhagia due to fibroids should in nearly all cases be treated by removal of the tumour either by (1) myomectomy, or (2) hysterectomy, partial or total. Preservation of the uterus is desirable on several grounds, of which we may place first the potentiality for conception in a patient of child-bearing age. Beyond this, however, the idea of losing the womb is repugnant to most women, even though conception is no longer possible. Moreover, the removal of the uterus seems to hasten by a year or two the natural age-atrophy of the ovaries, so that the climacteric is hastened. A further point is that hysterectomy may have a psychological effect on the sexual attitude of both wife and husband, because desire is chekced by the fact that the sexual act has lost its main significance.

Myomectomy, then, is the operation of election, but conservation is only advisable under certain conditions. An important one is that the surgeon should see the patient before her health has been seriously injured by hæmorrhage; where a woman has been bled white, even the amount of blood lost at a normal period is too much for her, and the quickest way to restore her to health is to stop the periods altogether by hysterectomy. Moreover, when the tumours are many and large the operation becomes a more difficult one than hysterectomy. For these reasons surgery should not be delayed, since there is a period in the life-history of all fibroids, be they ever so large, so numerous, or so harmful in their effects when they could be safely removed without sacrificing the uterus. Generally speaking, myomectomy is the proper operation for patients under 40 years of age, and hysterectomy for those approaching 50, while for those of intermediate age the decision depends on individual circumstances. I believe that most fibroids begin to be formed in the later twenties or early thirties, much earlier than is generally thought. I base this view on the fact that though I have now performed myomectomy on many relatively young patients, only twice have I seen new fibroids form, and those very small ones. No rule as regards the size and number of the tumours can be laid down. Large tumours are often easier to remove than small ones. Much depends on their situation in the uterine wall. I have removed as many as 52 fibroids from one uterus, reconstructing the organ afterwards, so that six months later it felt on examination to be absolutely normal. Finally, I would again emphasise the importance of surgical interference as early as possible. When hysterectomy is necessary I believe the subtotal operation to be preferable whenever the cervix is reasonably healthy.

Radium has been advocated in the treatment of certain cases of small fibroids, but I strongly disapprove it. It is a blind proceeding and not

* The first section of this article appeared in THE LANCET last week.

unassociated with risk. Anyone who is familiar with the conditions found in a myomatous uterus after removing it knows how different they frequently are from what they were imagined to be before the operation; thus an enlargement held to be due to an interstitial tumour may be found to result from a pedunculated mass, accurately filling the cavity. Radium checks uterine hæmorrhage by destroying the endometrium, but it often destroys some of the musculature as well, and thus a fibroid may be caused to undergo necrosis, a dangerous thing. Moreover, small fibroids are those most suitable for myomectomy.

X Rays.—The treatment of fibroids by X rays I heartily condemn. It is in effect a revival of the bad old operation of double oöphorectomy for fibroids; ablation of both ovaries led to an acute c'imacteric, and in a proportion of the cases the periods ceased and the tumour ceased to grow, or partially shrank. The price paid for this relief was an acute "change of life" with all the miseries which accompany it; worse than this in quite a number of cases neither the bleeding nor the growth of the tumour was checked. X rays effect a bloodless oöphorectomy followed by results exactly the same and exactly as variable as the old operation. I have now a number of times had to operate on patients after they had had both ovaries unavailingly destroyed by X rays. Moreover, I have seen irradiation followed by acute septic degeneration of the tumour and by severe X ray burning of the abdominal wall. It is, to my mind, a bad and retrograde procedure which appeals to the fearful patient as a means of escape from "the knife," though the physiological and anatomical alterations produced by it are in reality far more serious than those produced by hysterectomy, whilst the ideal surgical procedure of myomectomy cures without disturbing either function or normal structure.

Menorrhagia with a Normal-sized Uterus.

Patients with a uterus of normal size are more difficult to treat because the cause of the bleeding is more obscure. The conditions which cause an unenlarged uterus to bleed too freely are mainly two—uterine fibrosis and so-called endometritis.

Uterine Fibrosis.—Uterine fibrosis, which is not dependent on subinvolution, is a true inflammatory fibrosis and is typically seen in cases with a history of definite uterine infection. It may follow gonorrhœal, puerperal, and post-abortional infections. The uterus is not enlarged, but it is very hard and fibrous, whilst the endometrium is much reduced in thickness. The menorrhagia is often exceedingly severe, and to complicate matters a large proportion of the patients are quite young women who desire children and have none. Some have previously been operated on for inflammatory disease of the appendages. Curettage is quite useless, though many of these women have been curetted several times and have taken every known uterine styptic.

In such circumstances two courses remain: (*a*) to remove the uterus or (*b*) to use radium. I would, in most instances, remove the uterus, firstly, because it is a useless organ, and secondly, because in many cases it is still the seat of chronic infection. Radium has a better field here than when the uterus is enlarged and much success has been claimed for it. My own experience is that though it checks the bleeding or even stops it altogether for several months, not infrequently the menorrhagia presently recurs and a further dose is requisite. Repetition of the treatment is not without risk. I have seen several cases in which deep necrosis of the uterine wall was produced. My impression is that the first application of the radium produces a condition of low vitality in the tissues affected on which a second application may act with destructive effect. A further objection to radium is that its prolonged or repeated use causes atrophy of the ovaries in the same way that X rays do. This is a very disastrous thing if the patient is young.

So-called "Endometritis."—Cases in which no obvious change in the uterus or uterine wall can be discovered, and yet the woman bleeds too freely at her periods, are most difficult to treat, for we know little of the process of normal menstruation. Many of these cases are labelled as "endometritis," but there is no histological evidence of this condition. It seems reasonable to suppose that there may exist some abnormality of the function of the ovaries or of the glands correlated to them, and on this theory endocrine treatment has been extensively employed of recent years. The results obtained are very unequal, nor do they help us to formulate any scheme of administration. The various ovarian extracts now on the market, together with thyroid, pituitary, and mammary substances, should be tried, but as to which combination is likely to give the best results in any individual case we have no certain knowledge. These, together with the uterine styptics, constitute our first line of attack. It is noteworthy that some of these cases of menorrhagia get well of themselves after all treatment has failed.

Curettage achieves success sufficiently often to be well worth a trial. This failing, *radium* may be tried. Its effect is identical with that of curetting in so far as it produces superficial destruction of the endometrium, but it produces far more fibrosis than does the curette and hence its effect is more likely to be lasting. On the other hand, the dangers and drawbacks referred to above accompany its use.

In place of radium, or following the failure of radium, we have *abdominal hysterotomy* with curettage from above. The operation has the advantage of enabling the surgeon to obtain accurate knowledge of the condition of the uterus and occasionally reveals a definite though unsuspected cause for the bleeding like a small polyp, or a localised thickening of the uterine wall, which can be excised. Finally, we come to those distressing cases where, other treatment having failed and the patient being very anæmic, it is necessary to remove the body of an apparently normal uterus. X ray treatment should never be employed for reasons already given.

Menorrhagia with a Uterus Smaller than Normal.

A small uterus does not necessarily mean a small monthly loss; the most profuse and persistent menorrhagia may proceed from the undeveloped organ, possibly because the defective musculature is unable to close down upon and control the vessels of the uterine wall. Patients with this type of uterus are young and usually unmarried, and are therefore most undesirable subjects for any drastic steps. Endocrine treatment may first be tried in the hope of stimulating further development of the uterus, combined with ergot, styptol, hydrastine, and so forth. This form of menorrhagia may improve after marriage, whilst pregnancy is most desirable since it may result in cure; conception in an undeveloped uterus, though unlikely, is by no means impossible. Curettage should be tried, and radium may be employed seeing that if these measures fail it may be necessary to remove the body of the uterus. This step should not be delayed until the patient has passed into a profound anæmia, for then the risk of operation becomes very great. These cases of "terminal anæmia"—the end-result of severe and prolonged menorrhagia—are not so uncommon. The skin is dead white with a slight lemon tinge; the temperature may be 102° or 103° F.; the pulse is very rapid, up to 160, and "water-hammer" in type; the mind is alert and anxious, but not frightened; and from the vagina flows a steady stream of thin brownish-looking blood, usually with a very unpleasant odour. This state is invariably due to ill-advised persistence in palliative measures long after there has ceased to be any hope in them. Patients so ill will not stand a long operation; the surgeon must remove the uterus in 15 minutes or less in order to save more than a small proportion of them.

VICTOR BONNEY, M.S. Lond., F.R.C.S. Eng.,
Surgeon to the Chelsea Hospital for Women; Assistant Gynæcological Surgeon to Middlesex Hospital, &c.

Special Articles.

THE PROBLEM OF PROSTATECTOMY.

BY CHARLES A. PANNETT, M.D. LOND., F.R.C.S. ENG.,
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THE enlargement which causes prostatic symptoms is most commonly benign in nature. It grows in a gland whose function is on the wane. It can be separated easily from its surroundings. It occupies a surgically accessible position. To begin with, the therapeutic outlook is good, but later, when the inevitable implication of the kidneys has occurred, the situation becomes serious and ultimately life-menacing. There may be no apparent signs of this grave change. The increasing inexorable demands upon the large reserve function of the kidney for ordinary physiological needs bring the patient imperceptibly to the point where he is unable to meet the smallest additional call upon his vitality. Any slight disturbance may precipitate a catastrophe; an operation will certainly do so. The root of all this trouble is the injury which the kidney cells suffer from having to secrete against unusually high pressure. After a certain stage the kidneys of a prostatic always show the changes of chronic interstitial nephritis and the alterations of form due to distension of the calices and pelvis. With this distension goes a distortion of the renal tissue, so that the collecting tubules may take a curved course to their mouths on the pyramids. This sinuous path, because the deformity has taken place gradually, is not accompanied by obstruction, but should the pressure in the kidney pelvis be suddenly lowered by catheterisation of an over-distended bladder, or by suprapubic cystostomy, the elastic recoil of the strained kidney tissue is liable to bring about an obstructive kinking of the collecting tubules, a suppression of urine to which the patient succumbs. At the critical stage of the disease it is dangerous to empty a distended bladder by any route unless it be done gradually. Symptoms of uræmia following rapid evacuation of the bladder have been banished by filling up the bladder again with fluid.

The retention of excretory products the result of the depression of the functional capacity of the kidneys would seem to exert a poisonous effect upon most other body tissues with disturbance of their activities. Cardiac degeneration diminishes the heart's power of response, so that failure may occur. Immunity reactions are enfeebled. There is a greater liability to succumb to infections. The hæmopoietic organs are insufficient, so that an anæmia appears. The removal by leucocytes of the shreddy necrotic walls of the cavity left after prostatectomy, the increased katabolism accompanying a mild febrile reaction, may bring the amino-body content of the blood to a point where the kidneys are inadequate to excrete the urea formed in the liver; or the crippled activity of these organs may be further interfered with by a diminution of the volume of circulating blood from an unavoidable hæmorrhage. In both cases uræmia supervenes. In connexion with prostatic disease the doctor, therefore, has a four-fold aim: (1) To intervene before the obstruction has reached a stage when the kidneys will suffer damage; (2) to recognise how far the patient's health has been undermined by his urinary disturbance; (3) to bring about that temporary degree of recovery which will allow of effective treatment to be carried out with a reasonable amount of safety; (4) to remove the obstruction in such fashion that the immediate risk will be the least possible with ultimate restoration of normal urination.

Decision as to the Necessity for Operative Measures.

Putting aside urinary infection, to which these patients are particularly prone, the first consideration must be the degree of urinary obstruction which exists and whether it has reached such a point that damage to the kidneys is already taking place. The index of this is the volume of residual urine. The existence of urine in the bladder after the act of micturition means that the wall of this reservoir has become permanently stretched, so that, by muscular contraction, it is no longer able to obliterate its cavity completely. That urine can be drawn off by catheter after the failure of natural efforts to expel it is due to the fact that the point of the inserted instrument fixes the apex of the bladder so that the weakened walls are now able to contract closely round the shaft. The proof of this is the ability to withdraw more with a silver than with the less rigid rubber catheter. Now the urine, during micturition, is prevented from flowing backwards up the ureters by the sphincters at their lower ends and the oblique passage of these tubes through the bladder walls. When the bladder has been sufficiently distended, both these protective arrangements fail to act. The sphincters become useless. The ureters run perpendicularly through the bladder wall. They dilate and the kidneys soon have to secrete against unaccustomed pressure. The valve mechanism at the lower end of the ureters becomes incompetent when the residual urine amounts to from three to four ounces. Hence the rule that measures for the relief of prostatic symptoms should be undertaken when the residual urine reaches this amount. The volume of residual urine and the presence and degree of infection determine whether or not prostatectomy should be contemplated. There is no difference of opinion to-day. The advantages of prostatectomy over catheter life have been amply demonstrated; the greater expectation of life which it offers alone is sufficient recommendation. The one essential is that a true estimate of the general condition of the patient be arrived at, so that he shall not knowingly be subjected to a strain beyond his powers to resist.

Determination of the Ability of the Patient to Undergo Prostatectomy Successfully.

It may be said at once that such knowledge cannot be obtained from one test alone. Neither is it possible to say, when considering the result of a particular test, that above a certain value operation is safe, whilst below it disaster will follow. The reports of a number of tests must be brought into review. Those clinical features which are insusceptible of measurement as yet must be given their due weight. In short, the value of the general clinical impression must be acknowledged and indeed acted upon. Signs of imperfect elimination are thirst, a dry furred tongue, loss of appetite, sleeplessness, evidence of loss of weight, often a mental unfitness. The heart sounds may be feeble and breathlessness appear on slight provocation. The hæmoglobin content of the blood may be much diminished. If it be below 60 per cent. the risk of operation is great, for the amount of blood which will be lost during the operation cannot be foreseen, nor can it be always controlled easily. The blood pressure is often high. If it is above 170 or 180 mm. Hg, conditions are not favourable for operative intervention. The state of the kidneys can be judged in a number of ways. If they are much damaged the urine will be of low S.G., 1002–1004, and the patient will pass more than the usual quantity, sometimes three times as much. The quantity of urea in the blood is high. If the urea-nitrogen in the blood be about 20 mg. per 100 c.cm. operation is fairly safe, if it amounts to 25–30 mg. there is considerable risk, if it be over 30 mg. the prognosis is bad. Of the special renal function tests, the best is the urea-concentration test. Many surgeons pay much attention to the phenol-sulphonephthalein test, some to the indigo-carmine excretion. Of them all it is difficult to be dogmatic in fixing the point which separates danger from comparative safety. Thus, generally speaking, in the first test the concentration of urea should reach 1·5 per cent. before prostatectomy can be considered, yet sometimes a patient can be carried through to

safety with a concentration under test of only 1 per cent.; and whilst he should be deemed a bad surgical risk if he fails to excrete 30 per cent. of the injected dose of phenolsulphonephthalein in two hours, cases are recorded where the excretion of this dye has been far below this percentage, yet the individual has survived prostatectomy. The kidneys are to be regarded as seriously diseased should the excretion of indigo-carmine be delayed longer than 10 minutes after the intravenous injection of 5 c.cm. of a 0·4 per cent. solution.

Preparation of Patients Unfit for Immediate Prostatectomy.

It is a fortunate fact that the precarious condition due to urinary retention toxæmia can be relieved by draining the bladder under proper precautions. It is astonishing how this simple measure will in a few days alter the whole clinical outlook. Whether urinary function, blood pressure, or general well-being of the patient be taken as the criterion, a very pronounced improvement can be demonstrated; so much so that prostatectomy, which before would certainly have proved fatal, can now be performed with relative immunity. It can therefore be laid down that when the tests detailed above show that much sapping of the patient's vitality has gone on, or when an examination of the urine shows that there is a serious urinary infection, preliminary drainage should always be instituted. This may be done by an indwelling catheter or by making an opening above the pubes. In any case, as has been pointed out, relief of tension should be gradual if there is any considerable degree of retention. Suprapubic drainage is necessary when the infection is severe, when no instrument can be passed, when the patient's urethra is intolerant, or when drainage must be maintained for long. In other cases drainage by catheter has obvious advantages. It not only saves the patient an operation, but it renders subsequent operation more easy. Suprapubic cystostomy has not counter-balancing advantages. Drainage, however it is carried out, always has a pronounced effect upon the patient. For the first four to six days his kidney function will be found to be considerably depressed. He is less fit than before. That is why prostatectomy should never be performed without primary drainage unless the functional tests are extremely good. The kidneys should not be subjected to the insult of drainage combined with operation at one time. The period for which drainage should be maintained varies very much. After an interval, improvement of the patient's condition becomes evident to all tests. Usually this will take place in two weeks, occasionally months of drainage are necessary. Such remarkable recoveries take place in patients with extreme nitrogen retention, as proved by blood estimations when drainage is instituted, that to relieve a prostatic of his hypertrophied gland need hardly ever be regarded as a hopeless problem.

Choice of Radical Operative Technique.

Two points merit brief consideration—the route by which the prostate should be removed, and the method of anæsthesia. The suprapubic operation is performed almost exclusively in this country. It is simpler and gives a higher percentage of good results in less skilled hands. The perineal operation has certain advantages. Shock is less, hæmorrhage appears to be less and more under control. The danger of incontinence or recto-vesical fistula can be obviated by careful technique. Neither operation should be performed to the exclusion of the other. The suprapubic route is to be preferred when suprapubic drainage has been necessary, when the enlargement is of the ball-valve type, when cystoscopy has revealed the presence of a stone. In most other cases the perineal route can be followed, with less anxiety for the immediate future.

General anæsthesia by ether is satisfactory on the whole. Spinal anæsthesia makes enucleation easy, but would seem to add to the risk should much blood be lost owing to the drop in blood pressure caused by it. The perineal operation can be performed absolutely painlessly by trans-sacral combined with epidural anæsthesia. This is an excellent method when it can be carried out. Suprapubic operations have also been done under local anæsthesia, but the writer has no experience of this procedure. A reliable easy local anæsthetic method would certainly oust ether narcosis.

Results of Prostatectomy.

Statistics seem to prove that of those patients who survive the operation more than 80 per cent. are restored to normal health. Nevertheless, it must be recognised that the lower operative mortality of the few specialists does not reflect the mortality in the general surgeon's hands. During convalescence, lung complications, sepsis, hæmorrhage, uræmia, or embolism may lead to the death of the patient. The mortality is lowered immensely by the careful pre-operative treatment described above. Uræmia can be almost certainly prevented, the resistance to infection is raised, so that lung complications, sepsis, and secondary hæmorrhage are very less likely to occur. It cannot be too strongly emphasised that precipitancy in prostatic surgery is always out of place. Prostatectomy must follow preliminary preparation and investigation, or unrecognised risks will be taken. It is not an emergency operation.

A patient who has lost his prostate may still suffer from an infection of the kidney which will not clear up. Some patients continue to have a certain degree of frequency. Quite rarely stricture occurs, and occasionally weak control after even a careful perineal operation. This diminished power of control, however, disappears in a month or two when the operation has been properly performed. The majority of patients return to complete health and lead active lives.

BRITISH INSTITUTE OF RADIOLOGY.

THE British Institute of Radiology, of which Sir Humphry Rolleston is President, was founded some eighteen months ago, very largely through the keenness and initiation of the late Sir Archibald Reid, to provide a central bureau to house, coördinate, and extend the work of existing radiological societies. The premises are situated at 32, Welbeck-street, London, and constitute a centre for professional and social intercourse among those interested in radiological work. The *British Journal of Radiology* is published monthly as the official organ of the Institute, and the formation of an adequate reference library is provided for. The nucleus thus formed, however, has absorbed such small capital as was available, and in November of last year an appeal was made to the medical profession, to radiologists, and to the public generally, for £6000 to wipe out bank debts and provide for further development. Subscriptions were asked for in one or more of the following ways: (*a*) By donation to the General Foundation Fund; (*b*) by donation earmarked for the Reid Memorial collection; (*c*) by becoming a member (£1 1*s*. entrance and £3 3*s*. annually) entitling to receipt of journal; (*d*) by becoming a life member (£50) entitling to receipt of journal; (*e*) by becoming an Associate (10*s*. 6*d*. entrance and £1 11*s*. 6*d*. annually).

List of Donations.

We publish herewith a list of the donations received up to April 10th. From a survey of this list it will be seen that radiologists have responded to the appeal very satisfactorily, but their professional colleagues—with a few notable exceptions—have made little response; whilst the non-medical public, beyond a number of the late Sir Archibald Reid's personal friends, has hardly yet been reached. This position can be advanced only by individual members striving to interest their personal colleagues, friends, and patients. The total received in 18 months

(up to April 10th), as detailed below, is £1680, and in nine months 52 new members have been enrolled. This effort may surely be quoted as a worthy basis for a further appeal.

	£	s.	d.
Dr. A. E. Barclay and Mr. J. H. Crowe .. each	150	0	0
Mr. C. Thurstan Holland	110	10	0
Dr. F. Howard Humphris and Dr. R. J. Reynolds .. .. each	52	10	0
*Lieut.-Colonel J. R. Garwood and Sir A. Reid (late) .. .. each	50	0	0
Dr. Robert Knox and Dr. S. Melville .. each	34	9	0
Dr. S. Gilbert Scott	28	18	0
Dr. B. Shires	26	5	0
*Sir E. De La Rue, Dr. J. M. W. Morison, Dr. G. H. Orton, *Mr. C. E. S. Phillips, F.Inst.P., Sir Humphry Rolleston, Dr. L. A. Rowden, and Dr. G. Thornton .. .. each	25	0	0
Dr. N. Finzi	21	0	0
Dr. W. Mitchell	20	10	0
Miss Anderson (per Dr. Reynolds) and Mr. M. R. J. Hayes, F.R.C.S. .. .. each	20	0	0
Dr. H. E. Gamlen	17	17	0
*Mr. A. E. Dean	16	16	0
Dr. H. Black	15	15	0
Dr. F. F. C. Jagger	15	5	0
Dr. Carlos Heuser (Buenos Ayres)	15	0	0
Dr. Agnes Savill	11	11	0
Dr. G. B. Batten, *Mr. H. A. T. Fairbank, F.R.C.S., Dr. W. G. Harvey, Dr. F. Hernaman-Johnson, Dr. A. McGregor, Dr. D. D. Malpas, Dr. H. E. H. Oakeley, *Mr. G. W. Paton, Dr. A. E. Payne, Dr. R. W. A. Salmond, Dr. Shillington Scales, and Dr. F. Storey .. .. each	10	10	0
Dr. R. M. Beath	10	5	0
*Duchess of Bedford, *Miss Hague, *Miss Rae, *Lady Reid, Dr. J. R. Riddell, *Brig.-General W. Tylden, and Dr. Curtiss Webb .. each	10	0	0
Dr. J. E. A. Lynham	8	8	0
Messrs. Watson and Sons	8	2	0
Dr. D. F. Sells and Captain T. W. Barnard .. each	6	6	0
Dr. W. Stewart (U.S.A.)	5	16	5
Dr. C. C. Anderson, Dr. A. A. Burrell, Dr. A. Charles, Dr. W. N. Clemmy, Dr. H. A. Colwell, Dr. G. Cooper, *Dr. T. G. Evans, Dr. W. Garton, Mr. A. C. Gunstone, *Mr. T. Hamblin, Dr. T. G. Hardman, Dr. J. O. Harvey, Dr. G. W. C. Kaye, Dr. G. W. Mitchell, Mr. C. Mansell Moullin, F.R.C.S., Dr. D. M. Muir, Dr. W. B. Prowse, *Misses F. and A. Reid, Dr. D. L. Rhys, Dr. W. M. Robson, Prof. S. Russ, Dr. G. H. Rutter, Dr. H. B. Scargill, Dr. E. I. Spriggs, Dr. H. H. Stewart, Dr. D. Stone, Dr. F. W. Taylor, Miss W. A. R. Tyrer, Mr. E. J. W. Watkinson, Dr. J. H. D. Webster, Dr. J. A. Wilson, and Dr. E. S. Worral .. .. each	5	5	0
Dr. Douglas Quirk (U.S.A.)	5	3	4
Dr. M. J. Hubeny (U.S.A.)	5	2	5
Dr. A. Howard Pirie (Montreal)	5	2	3
*Mr. J. E. Adams, F.R.C.S., Dr. Beverley Bird, Dr. E. P. Cumberbatch, Dr. H. T. George, Dr. J. Gerber (U.S.A.), *Mrs. G. B. Hall, Dr. S. A. Heyerdahl (Oslo), *Mr. Alexander Keiller, *Colonel Macfarlane, *Sir G. Makins, F.R.C.S., Dr. W. Martin, Dr. M. M. Melrose, Dr. F. P. Montgomery, *Miss L. J. Thompson, and *Mrs. Tylden .. .. each	5	0	0
Dr. J. H. R. Heath and Dr. C. J. Heaton .. each	4	4	0
Dr. T. Anstey-Chave, Dr. S. Colyer, Dr. R. Connell, Dr. H. M. Hewlett, Dr. J. R. Levack, Dr. E. McCullock, Dr. A. B. MacLean, Dr. C. Saberton, Dr. E. M. White, and Dr. Sanford Withers (U.S.A.) .. .. each	3	3	0
*Mrs. G. Alexander, *Miss Beausire, Dr. W. E. Boyd, *Dr. J. A. Drake, *Admiral Hawksley, Dr. F. L. Henderson, Dr. E. H. Howlett, Dr. W. C. Lond, Major McGrigor, R.A.M.C., Dr. J. Metcalfe, Major R. B. Myles, R.A.M.C., *Miss Owen, Dr. L. Russell, *Mr. G. Gordon-Taylor, F.R.C.S., and Major E. V. Whitby, R.A.M.C. each	2	2	0
Mr. J. Rowe Dutton	1	6	0
*Dr. Basil Adams, Dr. Wm. Ainslie, Dr. G. Alexander, Dr. T. L. Bunting (late), *Captain and Mrs. Coldbeck, Dr. M. Davidson, Lieut.-Colonel K. Edgcumbe, R.N., Dr. T. R. Elliott, Major J. R. Hill, R.A.M.C., Dr. A. Hilton John, *Dr. E. M. Knowling, Mr. Cuthbert Lockyer, F.R.C.S., Dr. J. H. P. Paton, *Mr. T. R. G. Roberts, *Mr. C. W. R. Stokes, and *Mrs. M. Thomas .. each	1	1	0
*Colonel R. P. F. Hawksley and Major Kidd, R.A.M.C. .. .. each	1	0	0
Dr. A. H. Laird	0	10	6
*Miss L. R. Reid	0	7	6
Total to April 10th, 1925	£1680	4	5

Note.—Items marked * were sent specially marked for the Reid Memorial Fund.

PROCEEDINGS OF THE ROYAL COMMISSION ON NATIONAL HEALTH INSURANCE.*

(Continued from p. 944.)

EVIDENCE OF THE BRITISH MEDICAL ASSOCIATION.

IN its essentials the printed statement of evidence which is being placed before the Royal Commission at their sittings on April 30th and May 7th is substantially as it appeared in the original statement which was summarised in our issue of Jan. 10th. The differences are rather matters of drafting and emphasis to give effect to views which have been expressed in connexion with the conferences held to receive the views of the delegates from the several districts. The following condensed statement will, we think, sufficiently remind our readers of the points on which evidence is being tendered. We shall, in due course, give a summary of the oral evidence being given in exposition of this statement by Dr. R. A. Bolam, Chairman of Council; Dr. H. B. Brackenbury, Chairman of the Representative Body; Dr. H. G. Dain, Chairman of the Insurance Acts Committee; and Dr. Alfred Cox, Medical Secretary of the British Medical Association.

Authority of the British Medical Association.

Part I. of the evidence sets out that the Association has over 28,000 members, of whom some 19,000 are in Great Britain; that the majority of the members are general practitioners, but that the Association contains a strong representation of every section of practice; that its constitution enables it to ascertain and coördinate the opinions of its members; that the steps which have been taken in circulating papers and calling local and central conferences have been such as to ensure that every section of the profession was consulted; and, finally, that it is especially representative of insurance practitioners, its Insurance Acts Committee having been formally and repeatedly recognised as their official mouthpiece in negotiations with the Government. This part of the evidence is new.

Some General Aspects of the Insurance Scheme.

Though it is recognised that a National Health Insurance scheme is not necessarily, or even probably, the best means of utilising limited resources for the promotion of national health, yet if such a scheme is in existence, regard must be had primarily and constantly to the maintenance of health and the prevention of disease and not merely to the alleviation or cure of morbid conditions when once they have arisen. The existing machinery and the medical officers of the public health service should be brought into close and organic connexion with the insurance scheme. The conference of representative doctors held in 1922 resolved "that the measure of success which has attended the experiment of providing medical benefit under the National Health Insurance Acts system

* In previous articles the proceedings of the Commission were reported under the following headings: Introductory Note; The Scope of the Insurance Scheme (see THE LANCET, Jan. 31st, pp. 247–8); The Provision of Medical Benefit (Feb. 7th, pp. 301–3; Feb. 14th, pp. 355–6; Feb. 21st, pp. 403–5); Financial Provisions of the Act (Feb. 28th, pp. 454–7); Medical Certification and the Regional Medical Staff (March 7th, pp. 508–9); The Approved Societies and the Money Benefits (March 14th, pp. 564–5; March 21st, pp. 623–4); Evidence of the Hearts of Oak Society (March 28th, pp. 677–9); Evidence of the National Conference of Industrial Assurance Approved Societies and of the Manchester Unity Approved Society (April 4th, pp. 731–3); Evidence of Independent Order of Rechabites, of Rational Association Friendly Society, and of Miners' Societies (April 11th, pp. 784–6; April 18th, p. 839); Evidence of Mr. Alban Gordon (April 18th, pp. 839–40); Evidence of Joint Committee of Approved Societies, of Stock Exchange and Lloyds' Health Insurance Societies, and of Group of Catholic Approved Societies (April 25th, pp. 889–91); Evidence of the National Insurance Beneficent Society (May 2nd, pp. 943–4).

References to the paragraphs in the printed statements issued as appendices to the reports of the oral evidence are given thus: "App. X. 69," and references to the oral evidence thus—Q. 1369.

has been sufficient to justify the profession in uniting to ensure the continuance and improvement of an insurance system."

The medical attention of the working population has, it is contended, greatly improved in many ways which are set out in the evidence, and this condition has certainly been hastened by the National Health Insurance scheme. On the other hand, the growing volume of regulations and machinery has been regarded by insurance practitioners as oppressive or even menacing, and has by itself deterred many practitioners from taking part in the service at all. Five broad principles are set out as fundamental in any National Health Insurance scheme. They are reproduced at the beginning of each of the following sections of the evidence.

Persons to be Provided For.

General principle: The medical provision should be available for those persons, and only for those persons, who would be unable to obtain it without the help of the insurance scheme.

The present scheme includes without any income limit all manual workers, and non-manual workers with an income limit of £250 a year. Certain classes are excluded. The Association is of opinion that the excluded classes should extend to such persons as bank and insurance clerks, that any income limit should be applied universally, and that unless a lower limit than £250 is generally applied, the limit must be lowered in connexion with any scheme for the inclusion of dependants.

While agreeing that the dependants of poorly paid earners might properly be included in the insurance scheme, a considerable body of opinion within the profession fears that the difficulties may be so great as to make the suggestion of including even these persons impracticable. An extension to all the dependants (numbering probably 23 millions) of the present insured population is wholly unnecessary and would in practice be found almost impossible. The inclusion of any dependants would have to be accompanied by a home nursing service and a lightening of the doctors' duties in regard to records and reports and in other ways, and by an extension of welfare centres. As regards necessitous persons (presumably those at present coming within the Poor-law) the profession is prepared to undertake their treatment if called upon to do so.

Extent of the Provision to be Made.

General principle: The medical provision made for insured persons should be, as far as possible, complete.

The profession desires that the medical services publicly provided under the auspices of local authorities and the treatment (dental, ophthalmic, &c.) benefits provided out of the surpluses of Approved Societies should all be made an integral part of the insurance scheme or brought in proper relationship thereto, and that the provision should be extended so as to include complete consultant and specialist advice and treatment, full laboratory facilities for clinical purposes, residential, institutional treatment so far as is possible with the limited accommodation, dental advice and treatment, such ancillary help as can be given by nurses and masseurs, and an ambulance service. In general, the services should be available only on the general practitioner's recommendation, disputes as to the need for the extra service being settled by an official referee; in the case of dental treatment, however, there might be direct application to the dentist.

The medical personnel of the consultant or specialist service should consist of those registered medical practitioners who satisfy certain criteria as to status similar to those contained in the present medical benefit regulations as to the title of a doctor to give specialist treatment. The decision whether any individual practitioner does, in fact, satisfy these criteria should be in the hands of a local professional committee. In some areas consultant or specialist clinics might be established which might even be the out-patient department of a hospital; there should be proper facilities for exchange of records with the general practitioner and for personal consultation.

In connexion with a suggestion that maternity work should be brought into close and proper relationship with medical benefit, the evidence suggests that:—

> Provision for a woman within the insurance scheme should be for (*a*) antenatal medical examination (if requested by her) and supervision, (*b*) attendance by a registered midwife during normal labour and the puerperal period, (*c*) attendance by the practitioner of her choice during labour and the puerperal period when his attendance is requested by the midwife under defined conditions or when as the result of his antenatal examination he has declared his personal attention to be necessary.

As regards a clinical laboratory service, it is thought that, as a highly trained pathologist would be required whose work could not be confined to that for insured persons, the laboratories should be maintained under other auspices and a suitable contribution made out of National Health Insurance funds. In regard to appliances, it would be a great advantage if the present restrictions could be removed and all necessary appliances supplied; in some cases this might be on loan.

Terms of Service.

General principle: The conditions under which the medical attention is given to the individual should approximate as nearly as possible to those of private practice.

The insured person's freedom to change his doctor at any time ought of itself to solve the majority of questions of supposed neglect or improper behaviour on the part of a doctor. In regard to formal complaints the Association is of opinion that an appeal to the Courts should be possible not only on the ground of improper procedure as at present, but also on the ground that the penalty inflicted was out of proportion to the offence, and that in a case of proposed removal from the service the practitioner should have the right of appeal to a duly constituted central professional committee.

It is represented that the action of the Ministry of Health in a number of recent cases has given rise in the minds of many practitioners to a feeling of injustice or even a suspicion of vindictiveness. If a complaint has been dealt with under one part of the recognised machinery it should not be reopened or penalties inflicted under some alternative machinery, and in any case the propriety or otherwise of any particular method or line of treatment ought not to be made the subject of investigation in connexion with the insurance service

As regards approved institutions, it is urged that their standard of treatment is below that of the panel service, and that it is difficult to argue that they supply any such need of the community as justifies their retention under the general scheme of administration of medical benefit. With regard to certification, the profession looks upon the issue of a false medical certificate as one of the gravest offences of which a practitioner can be guilty. It considers that, in the main, medical certification under the Insurance Acts is remarkably well done, though the witnesses are prepared to reply to any allegations which may be made with regard thereto. It is desirable that the phrase "incapable of work" used in the Act in the certificates should be altered; certificates containing this phrase can be signed honestly only because the words are now understood to have a technical meaning, which, however, needs a pamphlet to set forth accurately.

Administration.

General principle: Medical representatives should be closely associated with the administration of the scheme, and as far as questions of purely professional conduct and treatment are concerned, judgment should be in the hands of purely professional bodies.

The central administration of all health services should be under the control of the Ministry of Health, and the local administration of all these services should be in the hands of a local authority established *ad hoc*, or acting through a statutory committee analogous to the existing statutory education committees of local authorities. Of existing authorities it is probable that county councils and county borough councils would be found the least unsuitable.

If there were such a unification of medical services as those suggested above, this would involve the disappearance of insurance committees and the transfer of the health functions of the Poor-law guardians. It is certain, however, that many of the members and officers of these bodies would be indispensable for the work of the unified authority. Each such authority would have a chief administrative medical officer, who would, no doubt, in most cases be the existing medical officer of health. In each area there would be also a statutory local medical committee.

Remuneration.

General principle: Remuneration should be on such a basis as (1) would produce an income not less than that which corresponding responsibility and work should produce in comparable private practice, regard being had to all relevant considerations; and (2) would not prejudice the continuous supply of the best type of practitioner.

The actual amount of the capitation fee having been so recently settled, the profession has no wish to reopen the question at the moment. The fee does not, however, in their view, afford a proper remuneration, and the extra amount allowed for rural conditions requires reconsideration (an appendix to the evidence deals especially with the latter point). If consultant and specialist services are added to the insurance scheme, payment should be for each service or for each session according to a tariff, and the funds for the general practitioner service and the extra services should be kept separate and distinct.

THE REBUILDING OF MIDDLESEX HOSPITAL.

THE fabric of Middlesex Hospital, London, which has stood—and stood for so much—for the past 150 years now shows signs of imminent dissolution. Its floors are decayed with dry rot, the ceilings are cracking, and its shallow foundations are insecure. The serving of a "dangerous structure" notice has been averted only by the closing of two wards, the strutting of the basement and 14 wards with heavy baulks of timber, and the undertaking by the hospital authorities that the whole of the old building will be demolished as soon as temporary accommodation for the patients can be found. We reproduce a photograph of one of the strutted wards, where the wooden beams obviously cause as much inconvenience as they must, in a dusty city, be insanitary.

A "crippled" ward.

The board of governors have come to the decision that the only possible solution for the situation is the entire rebuilding of the hospital on its present site at a cost of £500,000. This decision does not depend on the state of the buildings alone, but in all departments expansion and modernisation are required in accommodation and equipment. The work of the cancer department, which will remain untouched under the reconstruction scheme, is indicative of what might be done in other branches of medical science if adequate facilities were available. Middlesex Hospital is to be rebuilt, not from choice but from necessity, and unless the huge sum of half a million pounds can be raised, the hospital must simply go out of existence. Serious attention is being given to this problem, and a meeting of the court of governors, under the chairmanship of Prince Arthur of Connaught, will be held on Monday, May 11th, when the whole question will be discussed.

There can in this instance be no suggestion of the sale of a valuable site and removal of the hospital, since the site is not the property of the hospital authorities, but is simply held at a nominal rent through the generosity of the Berners family. There are other cogent reasons for the rebuilding of the institution in its present situation—one of the most important being that the district which it serves contains a million and a half of working population. Another reason, of great weight, is that round the present doomed hospital buildings are grouped the modern and up-to-date cancer wing, the research departments, the magnificent Bland-Sutton Laboratories, and the well-equipped medical school. There can therefore, in our opinion, be no doubt that the hospital authorities have decided wisely in this matter. The present site is central, convenient of access both for patients and staff, and is in the midst of the working district it serves. It is also very near some of the busiest thoroughfares in the metropolis, where casualties cannot but be frequent.

There is room for the necessary buildings, and it should be possible to build a thoroughly up-to-date hospital worthy of the great reputation of the present institution, with adequate accommodation, now lamentably short, for the special departments. There should be general sympathy with the authorities in the gigantic task so dramatically imposed upon them. This will need the generous support of a very wide public, and we may hope that many of our readers will be able to help, both directly and indirectly. The work of an institution of this character is of truly national importance, for not only is it concerned with the large numbers of patients who seek treatment there, but both the governing body and the staff have shown real interest in the important matters of medical research and education.

They have made excellent use of the special opportunities afforded them. The hospital has taken a leading part in cancer research, and the excellent original work being carried out in pathology and in biochemistry, as well as in clinical subjects, is apparent from the reprint of articles published during 1924 that we have recently had occasion to review. Close coöperation between those in charge of the patients and the scientific specialists in the various laboratories has long been maintained and has contributed in no small degree to the success of the work of the hospital. It would be in the nature of a national loss, rather than a local calamity, if the hospital ceased to exist and if its varied activities were curtailed, or came to an end.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

The Development of Therapeutics.

Dr. D. Murray Lyon, professor of therapeutics at the University of Edinburgh, delivered his inaugural address in a class-room of the University on April 28th, Prof. Lorrain Smith presiding. In the course of an interesting account of the development of therapeutics, Prof. Murray Lyon said that one might recognise in the teachings of to-day many traces of long discarded theories. In the primitive phase of medicine the prevailing note was superstition, mixed with some sense as well as a certain amount of mysticism. Religion and medicine were closely allied at this stage and were administered by the same authority. Three views as to the causation of disease were common among primiti e peoples: the religious view, that disease was due to some spiritual or non-human agency; the magical, that disease was due to human agency; or the natural, that disease was due to some simple natural cause. Traces of each type of belief, he said, might still be found at the present day. As for magic, who had not heard of the hard-headed business man who wore an "electric ring" or carried a potato in his pocket to protect him against rheumatism? The speaker then outlined the history of medical treatment from the brilliant period of the Greek philosophers to the present day of modern specific drugs and methods. While many of our drugs, he said, gave us almost absolute control over certain serious diseases, nevertheless a certain number of maladies were beyond the assistance of the medical profession. The victims of these for a time passed from one practitioner to another in search of cure, and eventually fell into the hands of quacks and patent-medicine vendors. Despite frequent statements to the contrary, medical men, well-knowing the shortcomings of their art, were willing to accept help from any quarter. Manufacturing chemists knew the weakness of medical men for trying out new forms of treatment. Another class of person, the patent-medicine vendor, was also alive to the limitations of the healing art, and sought to take advantage of the credulity of the public. As the law stood, anyone without special knowledge or qualification could produce and offer a nostrum for sale. The serious aspect of "patent medicines" was that many sufferers from recoverable diseases resorted to advertised drugs without ever having consulted a doctor, and wasted valuable time while they passed beyond medical aid. The danger was a real one, and it was time, Prof. Murray Lyon said, that the public awoke to the fact and took into its own hands some means of controlling this trade.

The Attack on Porridge.

Resentment against Prof. Mellanby's alleged attack on a national food-stuff is subsiding. Odd phrases from the Sheffield researches on cereals had been snatched from their context, and the fighting spirit was aroused by headlines in the newspapers denouncing oatmeal as a poison and porridge as a dangerous breakfast dish. Reason has prevailed, and it is seen to be possible to accept without emotion the statement that oatmeal, like other cereals, including barley and rice, contains a substance which hinders the formation of bone in young animals. This substance, the nature of which is obscure, may be regarded as a poison in so far as it interferes with the deposition of lime in bone-formation, thus predisposing children to rickets, and, in adults, at least disturbing the normal "give and take" of lime salts between the blood and bones. An antidote to this "poison" is happily within easy reach in vitamin A of animal fats. Prof. Mellanby, himself a loyal Scot, is naturally aware that thousands of his hardy compatriots have been reised on a diet consisting largely of oatmeal. A famous Edinburgh divine, who died only a few years ago, once told how as a University student 50 years before, he had lived in a garret and eaten nothing but oatmeal and salted herring. Indeed, the mid-term holiday in some Scottish universities is still called "Meal-Monday" because it dates from the time when students went home to have their meal-bags replenished. No doubt the abundant supply of vitamin A in milk, eggs, and fatty fish will continue to protect the porridge-eating Scot from rickets or worse.

University of Glasgow.

Among those on whom the University of Glasgow will confer the honorary degree of Doctor of Laws, on June 24th, are two distinguished surgeons, Sir John Bland-Sutton, President of the Royal College of Surgeons of England, and Mr. Martin T. Tuffier, professor of surgery at the University of Paris.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

The Dublin Hospitals and State Aid.

A BRIEF discussion arose in the Dail last week out of the vote of £4728 for hospitals and infirmaries. Mr. Burke, Minister for Local Government, pointed out that the hospitals receiving grants from this charity fund had gained a statutory right to the grants at different times and under peculiar conditions. Some of those institutions carried on in anticipation of getting these grants, and it would be a very serious matter to cut them off without having a thorough inquiry into the whole matter. It was a question for a Commission or a Consultative Council, and he hoped at an early stage to set up such a Commission or to consult with such a Council. In the discussion which followed it was stated that it was becoming a matter of increasing difficulty for poor people to obtain admission to the Dublin hospitals, owing to the necessity of keeping paying beds if the hospitals were to keep open at all. From all sides of the House there was a desire that the inquiry should deal with the whole question of the upkeep of the hospitals. It was also suggested that the question whether the number of hospitals should be reduced should be considered.

Society of Surgeons.

Last week the Society of Surgeons of the United Kingdom held its first meeting in Dublin, under the presidency of Sir William Taylor. Some 80 surgeons attended. The mornings of April 30th and May 1st

were devoted to general discussions and each afternoon was spent in operations at the several hospitals. On Thursday evening the surgeons dined together in the Royal College of Surgeons. The congress passed off very pleasantly, and the visitors appeared to have enjoyed their first visit to Dublin.

Treatment of Crippled Children.

Sir Robert Jones gave an address last week at the Orthopædic Hospital, Dublin, on the Treatment of Crippled Children in Open Air Hospitals. He expressed his admiration for the work and results he had seen in the hospital, and said that in Great Britain they had probably 100,000 cripples, and if a great national effort were made and they succeeded in getting the help they required, 90 per cent. of these cripples could be made useful assets. A large proportion of the cases was due to tuberculosis and rickets. Nearly all cases of bovine tuberculosis in children were due to direct poisoning by milk. One out of ten specimens of milk delivered at doors was infected with tubercle bacilli. Having emphasised the importance of fresh air, sunlight, and proper diet for children, he said the reason there was so much deformity in the country was that crippled children were not treated early enough; there was also the important matter of continuity of treatment. In any scheme that could be adopted it was essential that they should have a hospital in the country.

Irish Medical Association.

At a meeting of the Council of the Irish Medical Association held recently, Prof. F. C. Purser, of Dublin, Vice-President of the Association, was nominated as President, and Dr. H. T. Warnock, of Donegal, as Vice-President, for 1925–26.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Weak Points in Modern Medical Literature.

BEFORE the German Surgical Congress held recently in Berlin Prof. Sauerbruch delivered an address on certain faults in modern medical writing. He said that in his opinion the number of medical essays published was much too large, the reason being that the younger medical men engaged in scientific work were endeavouring to recover the time lost through the war and the after-war period and that professors in desiring to attract attention to their own clinics or hospitals stimulated their assistants to write. The result was that the work was often done quite superficially, no care was applied to the style, new technical terms were invented unnecessarily, and for the purposes of "padding" results of former investigations were repeated in the text. Concerning the work itself, there was a marked tendency to over-estimate the results of experiments in animals and in laboratories and to apply such results to the human species. He explained that medicine had now reached a crisis, new problems coming to the foreground, and the question of the human constitution was becoming more important than bacteriological and chemical considerations which were formerly the principal objects of medical investigation. He then drew attention to text-books for students. The more surgery is divided into special branches, he said, the more difficult it will be to write a good text-book. Only surgeons with a thorough knowledge of the different branches of surgery ought to undertake that task; he held that it was not desirable that text-books should be written by the collaboration of several authors who might hold divergent views, as such a compilation led to confusion in the student's mind. In handbooks which give the results of modern researches to readers who are already familiar with the subject the collaboration of several authors is necessary. Prof. Sauerbruch's opinion met with the approval of the members and was in the discussion supported by Prof. Bier, of Berlin, who declared that by exclusive experimental and laboratory work the younger generation had lost a good deal of their capacity of observation. He recommended to them to read the works of surgeons of former times who, although being apparently less scientific than the younger medical men, were nevertheless excellent observers from whom they might still learn very much. He mentioned the works of Sir Astley Cooper, of Prof. Dieffenbach, and others.

A Case of Auto-Suggestion.

Dr. Zehden recently showed to the Berlin Medical Society a man who gives public performances of his power of auto-suggestion in music-halls. This man had been wounded in the war, and in the army hospital he noticed that morphia which was administered to him had no effect. By auto-suggestion he succeeded, however, in becoming totally insensible to pain, so that a shell splinter could be removed from his leg without anæsthetics. After the war he turned this faculty of auto-suggestion to account, and in public performance allowed members of the audience to pierce his arms and legs with ordinary unsterilised hat-pins. Dr. Zehden reported that in the state of induced insensibility the man not only does not feel any pain but that neither hæmorrhage nor infection develops. Infection happened only once when, in a performance before a medical audience in Spain, he was unable to reach the state of total insensibility. The man, who calls himself To-Rhama, being the Sanscrit word for self-conqueror, does not show any symptoms of hysteria; his insensibility does not occur in a state of hypnosis but he remains awake and speaks and hears. Another remarkable phenomenon is that the man in that stage can dilate and contract his pupils voluntarily. The man was then pierced with a pin by members of the society and it was noted that not a drop of blood appeared on the pin.

Papilloma of the Stomach.

Before the Berlin Surgical Society Dr. Bötticher lately reported a case of papilloma of the stomach. The patient was a woman, 72 years of age, who had consulted him four years ago for slight gastric troubles. On palpation the presence of a growth of the size of a walnut was ascertained which was, of course, believed to be cancer. Operation was declined and the patient was not seen by him for four years. In 1924 she came again, in an emaciated condition, the growth now being the size of an infant's head. Laparotomy was performed under local anæsthesia, and on opening the stomach an enormous tumour attached by a broad base to the fundus of the stomach was found and removed with some difficulty. Microscopical examination proved that the tumour was papilloma. It was remarkable that the symptoms caused were relatively slight. Papilloma of the stomach is extremely rare, only five cases have hitherto been described, and in none of them had the diagnosis been made previous to the operation. Some authors are of opinion that papilloma develops from gastric ulcer; such was not the case in this patient. The danger to the patient lies either in the growth by its size producing an obstruction of the pylorus, or in hæmorrhage, or in eventual carcinomatous degeneration. Removal of the growth is, of course, indicated in every case and must be a radical one to avoid relapse.

A Question of Medical Etiquette.

It is an old custom for medical men to refrain from charging fees for attendance on their professional brethren and their families. This was justified at a time when the number of medical men was so small that personal relations existed between them and the system worked on a satisfactory quid pro quo basis. Times have, however, changed; the large number of doctors, at least in great cities, has made this system impossible, especially as a great number of medical men in this country, probably more than abroad, are specialists, whose services the general practitioner can seldom repay in kind. The custom has therefore grown up of recent years for the profes-

sional patient to recognise his medical attendant, if not a personal friend, by some gift, monetary or otherwise. A remarkable law suit concerning that question has recently taken place before a court in a great city of Northern Germany. An ophthalmologist attended another medical man suffering from severe iritis. He saw the patient 20 times at the latter's home and about 300 times in his consulting-room. Owing to the great amount of trouble connected with the case he sent a bill for M.1700, a rather moderate charge. The medical patient declined to pay, not because the charge seemed to him too high but because he held that it was the time-honoured custom among medical men not to charge fees to each other. The court asked for the opinion of the Medical Chamber, and when the latter declared that it was indeed contrary to custom to charge fees to a professional brother the court found for the defendant. This decision led to a discussion in the medical press. It is alleged that the old custom can no longer be maintained as conditions have totally changed. Some specialists are indeed consulted by medical men and their families to such an extent that they have little time to devote to other patients. A well-known specialist for infants' diseases stated that about one-third of his clientèle belonged to the families of medical men; another reported that he had been called at night to a medical colleague residing in a remote suburb to perform an urgent operation and that the considerable expenses connected with that case had never been recovered. The opinion of the Medical Chamber is not in agreement with the present condition of the medical profession.

Public Health Services.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

THE following are some of the health statistics for the year 1924 of a group of local government districts of varying status:—

Name of district.	Mid-year population (R.-G.).	Birth-rate.	Death-rates per 1000 of the population.				Death-rates per 1000 births.		
			All causes.	Tuberculosis.	Cancer.	Resp. diseases with influenza.	Neonatal mortality.	Infant mortality.	Maternal mort. from childbirth.
Poole B.	45,150	18·0	11·6	1·04	1·1	1·9	40	66	6·1
Woking U.D. ..	26,440	14·6	9·1	0·64	1·1	1·3	—*	35	2·5
Guildford B. ..	25,720	15·3	12·3	0·97	1·0	2·3	—*	52	2·5
Guildford R.D. .	20,060	14·6	10·9	0·65	1·7	1·8	—*	32	6·3

B., Borough. U.D., Urban district. R.D., Rural district.
* Information not given in the report.

Borough of Poole.

Dr. R. J. Maule Horne reports that Poole is growing rapidly. Over 500 houses were built last year and the cleansing services have a difficulty in keeping pace with the growth, which tends to be uncontrolled. Thus, houses in some cases grow up along an old cart track. The number of cesspools cleared by the department has increased from 411 to 434. Dr. Horne strongly advises the establishment of a regional advisory planning committee, to include representatives of contiguous districts and private estates. He emphasises the climatic advantages due to the shelter of the Purbeck Hills and the equability induced by the extensive sheet of water in the harbour, whence freedom from the damp sea-mists of the coast-line is obtained. He has a note of warning to sound with regard to the destruction of the pines, which are Poole's chief pride. Unemployment has fallen from a monthly average of 938 in 1922 and 626 in 1923 to 366 in 1924. There is, however, a large amount of quayside unskilled labour. A free open-air tidal swimming-bath is well used during the summer months, and Dr. Horne urges the provision of up-to-date well-equipped salt water swimming-baths which would not be subject to seasonal closure. Some effort is made to control mosquitoes by spraying the breeding-places with paraffin. The public analyst reports that, of 11 samples of butter examined, nine contained boric acid and a high percentage of water. Dr. Horne shows that while infant mortality has been declining, there has also been concomitantly a great decrease in the deaths of children from 1 to 5 years of age. The supervision of boarded-out children has been handed over by the board of guardians to the Maternity and Child Welfare Department.

In the school report Dr. Horne points out that verminous conditions are much too prevalent. The dental surgeons inspected 3209 children and found that 2181 required treatment. Only 637 of these actually received treatment at the dental clinic. The total amount received in fees in reduction of the gross cost of the school medical service was £33 10*s.*, including £8 12*s.* for dental treatment. The scale of fees has now been in operation for a year, and experience has shown that the chief branch of the work of the clinic to suffer from the imposition of a charge has been the care of the teeth.

Woking Urban District.

Dr. R. W. C. Pierce says the low infant mortality-rate of the last two years speaks well for the work inaugurated by the Woking Health Society and now carried out by the council. The council pay the Health Society a yearly grant of £50 for nursing infectious diseases among children. The Woking Health Society also maintains an excellent maternity home, in which last year there were 86 confinements, while 11 miscarriages and two antenatal cases also received treatment. No necessitous cases are refused, and 12 of the patients admitted were paid for by the council. The small cottage hospital, provided by voluntary contributions, has proved quite inadequate and an extension, consisting of two six-bed wards, three single-bed wards, and additional staff accommodation, is in progress. The clean milk movement makes progress. All the dairy cows are examined quarterly by the veterinary inspector, Mr. A. C. Wild. One case of generalised tuberculosis and a "waster" were found among the cows inspected (averaging 438), and destroyed. Considerable trouble was experienced with tents and vans on the commons. In all 107 tents and vans were removed, and application has been made to the Ministry for powers to make by-laws.

Guildford Borough and Guildford Rural District.

Dr. Pierce is also medical officer of health of these two districts. Nine cases of encephalitis lethargica were notified in the borough, but three of them, one fatal, belonged to other districts and were notified from the County Hospital. The ages of the six borough cases varied from 10 to 43. The patients who recovered were aged 10, 10, and 18 respectively, and the patients who died were aged 36, 42, and 43. In the rural district four cases were notified, three of which died, aged 40, 59, and 1½ respectively. The fourth case, a woman of 48, recovered. There appeared to be no direct connexion between any of the cases, either in the borough or the rural district. The number of new houses erected in the borough was 242, with State assistance for 72 council houses and 98 privately erected; while in the rural district 169 houses were built, of which 36 council and 19 privately built received State assistance. The milk question is receiving attention, and the clean milk competition conducted by the Surrey County Council has been taken up by many of the dairymen in the rural district. A prosecution and conviction for black smoke from a brewery chimney in the borough led to an appeal, but the decision of the magistrates was upheld and the appeal dismissed.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED APRIL 25TH, 1925.

Notifications.—The following cases of infectious disease were notified during the week, namely:—Small-pox 170; scarlet fever, 1530; diphtheria, 779; enteric fever, 28; pneumonia, 1136; puerperal fever, 62; cerebro-spinal fever, 12; acute poliomyelitis, 5; acute polio-encephalitis 1; encephalitis lethargica, 54; dysentery, 11; ophthalmia neonatorum, 117. There were no cases of cholera, plague, or typhus fever notified during the week. The number of small-pox cases showed an increase of 35 over the number for the preceding week. One case was notified from the County of London (Bethnal Green); 55 from Derbyshire (Derby C.B., 41); 5 from Leicestershire (Leicester C.B.); 22 from Northumberland; 17 from Notts (Mansfield Woodhouse, 10); 7 from Warwickshire; 34 from Yorks, North Riding (Middlesbrough C.B.); Yorks, West Riding, 3 (Rotherham).

Deaths.—In the aggregate of great towns, including London, there were 4 deaths from enteric fever, 122 from measles, 7 from scarlet fever, 110 from whooping-cough, 40 from diphtheria, and 139 from influenza, as compared with 162, 221, 242, and 281 in the four preceding weeks. In London itself the deaths from influenza numbered 18, from whooping-cough 26, and from diphtheria 9.

SMALL-POX IN LONDON.

Up to May 6th, 6 cases of small-pox have been notified in London: 1 from Lambeth and 5 from Bethnal Green. The Bethnal Green cases all occurred in one family, of whom the 3 children were unvaccinated, the father and mother having been vaccinated in infancy. The Lambeth patient was unvaccinated. It is understood that all cases are of the prevalent mild type.

The Services.

ROYAL ARMY MEDICAL CORPS.

Col. F. Ashe (late R.A.M.C.) retires on ret. pay.

Lt.-Col. and Bt. Col. H. Ensor to be Col., vice Col. F. Ashe.

Lt.-Col. D. S. Skelton is secd. for serv. under the Colonial Office.

Maj. T. J. Hallinan retires, receiving a gratuity.

Maj. S. McK. Saunders retires on ret. pay.

Capt. W. H. Dye resigns his commn.

TERRITORIAL ARMY.

Maj. L. A. Harwood to be Lt.-Col. and to command 167th (City of London) Fld. Ambulance.

Capt. J. P. McGreehin (late R.A.M.C.) to be Capt.

Lt. D. F. Hocken relinquishes his commn.

ROYAL AIR FORCE.

Flight Lt. C. P. Barber is granted a permanent commission in the rank stated.

Flight Lt. D. J. Jones relinquishes his temporary commission on account of ill-health.

INDIAN MEDICAL SERVICE.

Capts. Sahib Singh Sokhey, A. Seddon, and R. V. Martin to be Majs.

Fakhar-ud-Din to be tempy. Lt.

Capt. Mahdo Prasad to be restored to the active list from the temp. non-effective list.

KING EDWARD VII.'S CONVALESCENT HOME FOR OFFICERS.

The King has approved the reappointment of the undermentioned to the Consulting Staff of King Edward VII.'s Convalescent Homes at Osborne, Isle of Wight, for Officers of H.M. Navy, Army, and Air Force: Sir C. Wallace, Sir H. Waterhouse, Mr. G. E. Gask, Sir W. H. Willcox, Dr. C. H. Miller, Dr. H. S. French, and Dr. H. M. Fletcher.

BELGIAN CONGRESS OF STOMATOLOGY.—To celebrate the twenty-fifth anniversary of the Société Belge de Stomatologie, an international congress will be held in Brussels from July 11th to 14th. Lectures and practical demonstrations will be given, and leading specialists will deal with such subjects as focal infection, pathology and treatment of cancer of the mouth, vitamins, and so forth. The membership fee is 50 francs, which entitles the member to a copy of the Proceedings of the congress. Further information may be obtained from the joint secretaries, Dr. René Boisson, 35, rue Belliard, and Dr. Polus, 18, rue du Commerce, Brussels.

Correspondence.

"Audi alteram partem."

THE BATEMAN FUND.

To the Editor of THE LANCET.

SIR,—Have the bowels of compassion of the medical profession been utterly and completely resected? Surely some unorthodox surgeon has been stalking about the land with a thousand sparkling scalpels shimmering around him? He seems to have alighted on about 99½ per cent. of the medical profession and to have removed therefrom the compassionate organs above mentioned!

So far as I can make out, the contributions to this fund for a professional brother in trouble amount to about the same as the single contribution of the proprietors of THE LANCET. And this from the whole of the medical profession of Britain!

Dr. Bateman—a complete stranger to me—was cleared of the charge against him by the courts. We all know—or should know—what he has had to go through. We also know—or should know—that any one of us at any moment may be at the mercy of an ignorant jury. And yet all we can find between us is £250!

I enclose another small contribution in the hope that it may stimulate others to help a colleague whose name a British court of justice has cleared.

I am, Sir, yours faithfully,

A. GRAHAM-STEWART.

Cliftonville, Margate, May 1st, 1925.

*** We trust that the merits of this case will commend themselves promptly to more of our readers. The proceedings in the Court of Criminal Appeal will be found substantially reported in THE LANCET, Feb. 14th, 1925. Remittances should be forwarded to the Manager of THE LANCET, 423, Strand, W.C. 2, and made payable to the "Bateman Fund Account."

THE TREATMENT OF NON-PIGMENTERS BY LIGHT.

To the Editor of THE LANCET.

SIR,—In the course of a paper on light treatment in surgical tuberculosis read before the Tuberculosis Society, at their meeting held here a short while ago, Sir Henry Gauvain stated that those children who easily become pigmented under the influence of sunlight usually do well, while those who do not so readily pigment derive less benefit from the treatment, and sometimes are unable to endure it. Now pigment in the skin probably acts as a light filter, cutting out certain rays and allowing others to pass through; and since the pigmenters do well in spite of pigmentation it would seem that the benefit is derived from rays which are not excluded by the pigment. The rays which are intercepted by the screen of pigment are probably those which cause local inflammation and even constitutional disturbance; the consequence being that the pigmenters are able to receive a large dose of the healing rays, while the non-pigmenters cannot do so because they are upset by the rays which cause inflammation. It therefore seems desirable to seek for a means of excluding the latter rays while allowing the others to act with full effect on the children whose skins do not pigment under the action of light.

Many years ago, when summers were sometimes really hot, I tried the experiment of exposing to the full force of the sun's rays the greater part of my arms during a boating holiday. Round one arm I had stained a broad band of skin a pale shade of brown. The result of several days' exposure was to produce a state of inflammation and œdema above and below the stained zone, but the zone itself remained normal.

The moderate degree of staining had therefore completely protected the skin from the inflammatory rays.

My object in writing this letter is to persuade those who are applying the light treatment to sufferers from tuberculosis to try on those persons who do not appear likely to pigment well the effect of lightly staining the skin before exposure to the rays. In my experiment, so well as I can remember after so long an interval of time, I employed strong coffee to stain my arm, but I would suggest as a convenient substitute a weak solution of permanganate of potash. The face, of course, need not be stained since it can be shaded, nor the hands, accustomed as they are already to exposure.

I am, Sir, yours faithfully,

LOUIS COBBETT.

Pathological Laboratory, University of Cambridge, April 28th, 1925.

THE INFLUENCE OF TOBACCO.

To the Editor of THE LANCET.

SIR,—There is some confusion between tobacco and tobacco smoke concerning the content of nicotine. Some writers deal with the former, others with the latter. Heinz[1] says that only about one-sixth of the tobacco content appears in the smoke, and the *smoke*, according to Cow,[2] contains 1·5 per cent. of nicotine. The quantity absorbed varies greatly with the extent to which the smoke is inhaled. In a recent issue of the *Presse Médicale*, dealing with tobacco as a cerebral poison, Binet[3] refers to three manifestations occurring in animals on the administration of nicotine: cerebral congestion, cellular lesions, and memory troubles, but we are told very little about the quantities necessary to produce these results. To be of any value in their applicability to man experiments of this sort should be performed with quantities of nicotine which are in some way equivalent to those in the blood of heavy smokers, weight for weight. Man uses tobacco chiefly for its effect on those faculties which animals do not possess, and he easily acquires tolerance, as pointed out by Cow.[4] This is probably an example of the Lamarckian principle of the inheritance of acquired characters. The amount of 1–2 mg. of nicotine per litre of blood is not an excessive estimate in the case of a heavy smoker, and the withdrawal of that component from the blood may lead to troublesome symptoms, causing depreciation in efficiency as the overdose does in the light smoker.

We see inveterate smokers on the golf links, ounce-a-day men some of them, who are perfectly fit and apparently insusceptible to fatigue from much physical work. Considerable reduction of their allowance of tobacco is frequently followed not merely by discomfort but by decline of form. That the work of skeletal muscle like that of the heart may be enhanced by nicotine is quite compatible with the results obtained by Langley[5] in this domain. A scratch player at golf of my acquaintance suddenly stopped smoking altogether—he had been accustomed to almost an ounce a day—and, to use his own expression, "went to pieces" as a result. A man like this probably has an ordinary blood content of nicotine of 1 or 2 mg. per litre. The experience of this player so far looks like an argument in favour of abundant tobacco for golfers; but he persevered with his abstention until his form returned, and he thought it was even slightly better than before. The margin of difference, however, from the nicotine standard was too slight to warrant continued privation. Others, who for some reason abruptly give up smoking, complain that their faculties of memory and judgment are for a while impaired, as is their skill in various performances.

[1] Heinz: Quoted by Binet.
[2] Cow: Synopsis of Pharmacology, 1920, p. 93.
[3] Binet: Presse Médicale, 1925, No. 9, p. 134.
[4] Cow: Loc. cit.
[5] Langley: Jour. of Physiol., 1906, xxxiii., 374.

The symptoms produced by an overdose in the light smoker, such as insomnia, fast pulse, throbbing at the temples, indicate cortical and bulbar effects. The cardio-inhibitor tone is depressed, as is that of the vaso-motor centre somewhat later. These effects, while notably transient, are undoubtedly greater and last longer in the case of one smoking in a crowded room or theatre than in the open air, and it is a matter of importance in determining the influence of tobacco to attend to the hygienic conditions in which it is used. The absorption of the accessory substances such as pyridine bases as well as of nicotine, is probably greater in a confined space than in the open, and their elimination, shown by Straub[6] to be a slow process in general, is possibly still further slowed by such conditions. The point is one calling for study.

One thing I can affirm with confidence, something which must have a bearing on the action of nicotine on any tissue, is the need of pretty large doses of the drug in perfusion experiments in order to produce appreciable results in disturbance of the heart's rhythm and work, in the toad and frog. Small doses as used by Clerc and Pezzi for the dog's heart may cause change of rate, and of electrocardiogram in the mammal; but it requires a concentration of about 0·2 per cent. or more to cause arrest of beat, dissociation, and reversal. Further, at a certain stage of the action of nicotine the muscular functions are enhanced[7] owing to a dual effect on muscle-fibre and augmentor nerves, so that the ventricular systole is able to overcome a greater resistance to output than previously, and the work done in a certain time is increased. Lastly, the heart recovers quite well from prolonged action of the alkaloid.

Proceeding to the central nervous system, one may expect to find there also a fair amount of resistance to the influence of nicotine in man as in animals. One part of the investigation of the problem in man might suitably consist of observation of the effects produced by increase, over short periods, of the usual quantity of tobacco for the light smoker and diminution for the heavy smoker. These are more susceptible to the influence of change in their respective directions than would be the moderate smoker in either direction. The symptoms of vertigo, nausea, depression, &c., produced in the non-smoker do not take one very far, any more than in the case of animals.

The physiological effects of tobacco, as our present knowledge reveals them, are not sufficiently deleterious to counter-balance the benign influence of the drug in other respects. It may be abused, of course, but so may food, and this latter form of abuse is, in my opinion, responsible for greater evils than those resulting from the abuse of tobacco.

I am, Sir, yours faithfully,

D. T. BARRY, F.R.C.S. Eng., M.D.,
Physiology Department, University College, Cork.

April 25th, 1925.

[6] Straub: Eleventh Inter. Physiol. Cong., Edinburgh, 1923.
[7] Barry: THE LANCET, 1917, ii., 759; Arch. Int. de Pharmacodyn. et de Thér., 1920, xxv., 391; Communication to the Tenth International Physiological Congress, Paris, 1920.

CHARGES AGAINST PENSIONS OFFICIALS.

To the Editor of THE LANCET.

SIR,—I notice in your issue of April 18th my name is mentioned by your Parliamentary correspondent in connexion with charges against pensions officials as being the hon. and gallant Member for Salford. I write to say that I had nothing whatever to do with these charges and that I have always been Member for the Salisbury Division of Wiltshire.

I am, Sir, yours faithfully,

HUGH MORRISON.

9, Halkin-street, Belgrave-square, S.W.1, April 29th, 1925.

*** We greatly regret the inadvertence, which occurred obviously in transcribing the name from an alphabetical list of constituencies.—ED. L.

PREMATURE SEPARATION OF THE PLACENTA.

To the Editor of THE LANCET.

SIR,—In your report last week of the proceedings of the recent British Congress of Obstetrics and Gynæcology much of necessity has been omitted, and it is not surprising my remarks on the premature separation of the placenta do not appear. But you found space for Prof. B. P. Watson's opinion "that the primary condition was hæmorrhage into the uterine wall, and the separation of the placenta was a mechanical result of that"—an opinion which Prof. Watson thought was accepted. As, however, I do not know that all obstetric teachers and thinkers are agreed on this point, and lest your readers should imagine they are, I venture to put before you some reason for the belief that the separation of the placenta is primary, and that the hæmorrhages into the uterine wall are secondary to the increased and rapidly occurring uterine distension. Above all else is this, that the pathological changes which the uterine wall undergoes in accidental hæmorrhage are peculiar to cases in which the bleeding is concealed. I believe I am right in stating that the necrosis of the uterine wall on which the late Mr. Gordon Ley laid such stress, and the hæmorrhages into its substance, only occur when the blood extravasated beneath the placenta is prevented from escaping from the uterus. However this retention be caused, it is clear that as a result of the bleeding the uterus becomes more and more distended until the bleeding is checked. In bad cases the uterine distension is so great that the peritoneum covering the uterus is split in many places, and the blood (escaping from the high pressure arterioles) ploughs a way through the musculature, even reaching the peritoneal sac or invading the connective tissue within the broad ligaments. That the intra-uterine pressure is greatly raised is clear not only from the pathological findings at operation or post mortem, but also by the clinical finding that if the membranes be ruptured a further great loss of blood occurs with rapid death of the patient (Gordon Ley).[1] But when the blood escapes from the uterus, when the accidental hæmorrhage is apparent, such a distension of the uterus does not occur, and the changes—the necrosis and the hæmorrhages—of the uterine wall are not found. I do not know of a single case in which such have been reported.

And were Prof. Watson correct in his opinion, I submit that pathological changes in the uterine wall—e.g., at Cæsarean section, and apart from concealed accidental hæmorrhage—should occasionally be found. But is not the case otherwise? Moreover, Prof. Watson should show us how the hæmorrhages—the small ones scattered throughout the uterine wall, as the beautiful lantern slide shown by Prof. Whitridge Williams displayed—are caused. To attribute them to a preceding toxæmia scarcely holds in those cases of concealed accidental hæmorrhage, which from time to time occur without any sign of such a toxæmia. That a toxæmia or an anuria should arise subsequently to concealed accidental hæmorrhage is explained (in my view) by the effect of the uterine distension on the intra-abdominal pressure, and so on the other maternal viscera. In such cases the uterus is mainly prevented from bursting by the increased tonicity of the muscular sheets forming the roof, walls, and floor of the abdomino-pelvic cavity. It is reasonable to believe a great rise of extra-uterine pressure within the abdomen occurs, and that this must affect the flow of blood through the visceral—e.g., renal—capillaries.

As to the cause of premature separation of the placenta, I believe trauma plays a greater part than is at present allowed. The question is, What do we mean by trauma? Are we to limit this to such accidents as falling downstairs or being kicked on the abdomen by a horse? Or may such acts as carrying in the breakfast things play a part? It is interesting to note that in some of the cases reported by Gordon Ley the disease began in the morning—at 9 or 10 o'clock. In other cases, the disease seems to have begun during the night. A question in my mind is how often coitus in the latter weeks of pregnancy may occasion this accident. The conception is supported by the occurrence of the disease in primigravidæ (that is, in women with young husbands); by the fact that coitus late in pregnancy is not uncommon; and by the superstition that coitus just before labour facilitates delivery.

I am, Sir, yours faithfully,

R. H. PARAMORE, F.R.C.S. Eng.

Rugby, May 4th, 1925.

[1] Gordon Ley: Utero-placental (Accidental) Hæmorrhage: a Clinical Report of Fifty Consecutive Cases, Proc. Roy. Soc., Med., Obstet. and Gyn. Sec., 1920, vol. xiii., p. 169.

NURSING HOMES (REGISTRATION) BILL.

To the Editor of THE LANCET.

SIR,—You were good enough to allow me in your issue of April 25th to draw the attention of the profession to this Bill and its likely pernicious effect on all concerned in those instances where doctors received patients into their private houses. May I now draw attention to another aspect—that is, how it will affect the question of professional secrecy if the Bill goes through in its present form.

In accordance with Section 1 every nursing home will have to be registered or be closed down by June 1st next! If it is approved and registered then under Section 5 the Minister of Health will issue regulations prescribing the registers to be kept and the particulars as regards patients (names, addresses, accident or disease, treatment, result, &c.). Reports also will have to be made to the Ministry on these matters. Under Section 8 these registers and reports will be subjected to inspection and review by the medical officer of health or (and) a State-registered nurse appointed for the purpose. Under Section 9, if in order to protect professional secrecy the doctors refuse to keep these registers or to allow of this inspection and criticism, heavy fines can be inflicted on the proprietors, and if still recalcitrant the licence can be withdrawn and the home closed down.

At the present moment these homes are voluntary; the patients go there voluntarily; the doctors are voluntary and are paid by the patients. There is not a single vestige of State interference or supervision apparent. Everywhere, other than possibly in London, one hears that these homes are valued and those who conduct them are well known and respected by our profession. So-called homes die from want of material.

Is the profession willing—through apathy, indifference, or otherwise—to allow this Bill to go through without drastic amendment, with a further enroachment by the State on professional secrecy and professional liberty? If not, may one venture to urge every doctor interested—and there must be thousands—to immediately protest to their Member of Parliament, the B.M.A., in the press, and otherwise. The promoters desire the Government to take over this Bill and to make it a Government measure. There is no time to be lost.

I am, Sir, yours faithfully,

Hove, May 4th, 1925. E. ROWLAND FOTHERGILL.

"UNNECESSARY" OPERATIONS.

To the Editor of THE LANCET.

SIR,—In discussing Lord Riddell's paper, "The Legal Responsibility of the Surgeon,"[1] you referred to possible operations not necessary for conserving or improving the health of the persons seeking them, and to the "medical welfare" of the patient as the test by which the lawfulness or otherwise of a proposed

[1] THE LANCET, April 25th, p. 899; May 2nd, p. 931.

operation must be determined. The question of what the medical welfare of the patient may require must be for the surgeon to answer according to the particular circumstances of the case, and the necessity need not be such that immediate surgical interference is "necessary" in the ordinary sense of the word. It is a question of an honest endeavour to act rightly in the true interest of the patient. Here, for example, is an instance where an operation is rightful without being necessary, and the situation must often have occurred. A man is about to go for an indefinite period to a country where he is uncertain about obtaining the best medical advice. He consults his doctor as to certain symptoms and is told of the possibility, rather than the probability, of impending appendicitis, whereupon he decides to have his appendix removed before leaving London, where he is familiar with and has confidence in the conditions of surgery and nursing. When these operations are performed there cannot be any sequel to prove that they were necessary lest worse should happen, but they are rightly undertaken in the interest of the patient's "medical welfare." A more difficult problem would be propounded by a patient who, having never suffered from anything indicative of appendicitis, but being about to go beyond the reach of surgical skill, should demand the operation as a precaution. Who would be prepared to say that such an operation ought to be refused as prejudicial to the public good and so contrary to public policy? Yet I think the intending patient would not readily find a surgeon to fall in with his wishes. If certain general principles are admitted as governing such cases, their application to concrete examples must be left to the conscience of professional advisers.

I am, Sir, yours faithfully,

May 4th, 1925. F.R.C.S.

Medical News.

UNIVERSITY OF CAMBRIDGE.—At recent examinations the following candidates were successful:—

DIPLOMA IN MEDICAL RADIOLOGY AND ELECTROLOGY.

Part I., Physics and Electrotechnics.—Elizabeth M. Bird, John F. Bromley, Edward H. P. Cave, Margaret R. Clark, Beatrice L. Collins, William C. Fothergill, Eric D. Gray, John L. A. Grout, Adangaprathoo O. Jacob, Pami H. Jhangiani, Montagu H. Jupe, Peter J. Kerley, Athanase Lambadarides, Colin F. Macdonald, Ethel M. Magill, Phani B. Mukerji, Iqbal S. Nalwa, John O'Sullivan, Ketih A. Piper, Ernest J. H. Roth, Narendra S. Sodhi, Dulcie C. Staveley, Herbert M. Strickland, Cyril G. Whorlow, and Frederick E. Wynne.

Part II., Radiology and Electrology.—Edward H. P. Cave, Robert V. Clayton, William C. Fothergill, Adangaprathoo O. Jacob, Colin F. Macdonald, Cusack J. K. O'Malley, John O'Sullivan (distinction), Dulcie C. Staveley, Herbert M. Strickland, Richard S. Topham, and Cyril G. Whorlow.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—At a meeting of Comitia of the College on April 30th, Sir Humphry Rolleston, the President, in the chair, the following candidates, having passed the required examination, were admitted Members:—

Frederick M. B. Allen, Herbert A. Brookes, Morris J. Cohen, Leslie B. Cole, Robert H. Cooke, Macdonald Critchley, John N. Cruickshank, Charles F. Harris, Amy Hodgson, William A. Lister, Arthur S. MacNalty, David C. Muir, Robert Platt, Thomas D. Power, D'Arcy J. Prendergast, Jeffrey Ramsay, Chennagiri K. Rau, and Ambrose Spong.

The following Members were elected to the Fellowship:—

Robert Fortescue Fox, Athelstane Iliff Simey, Ivor Jones Davies, John Davis Barris, Henry Harold Scott, Joseph Godwin Greenfield, George Riddoch, Alfred Bertram Soltau, William John Adie, Frederick George Chandler, John William McNee, and Bernard John Hart.

Licences to practise were conferred upon 138 candidates, of whom 19 were women, who have passed the Final Examination of the Conjoint Board and have complied with the by-laws of the College. The following are the names and medical schools of the successful candidates:—

C. S. Anderson, St. Mary's; W. A. Barnes, Cambridge and St. Bart.'s; St. C. E. J. Barrett, Middlesex; I. C. P. Beauchamp, Cambridge and Guy's; J. R. Beagley, St. Bart.'s; Diana J. K. Beck, Royal Free; P. R. T. Becker, Cape and Guy's; Elizabeth E. Benson, Bristol; C. P. Blacker, Guy's; W. R. Bonner-Morgan, Cardiff and St. Bart.'s; E. H. Boodrie, Calcutta and St. Mary's; Duncan de C. Boxill, Long Island Coll. and St. Mary's; P. G. Brain, London; M. K. Braybrooke, St. George's; R. B. Brew, Univ. Coll.; C. W. Brook, Cambridge and St. Bart.'s; G. M. Brooks, Birmingham; M. F. Butler, Guy's; L. I. M. Castleden, St. Bart.'s; Enid A. Ceiriog-Cadle, Royal Free; M. Chandra, Punjab and St. George's; R. J. K. Chattey, Middlesex; J. E. Church, Cambridge and St. Bart.'s; Hilda A. Cohen, Cardiff; Jean Cooper, Punjab and Royal Free; Catherine A. Cowan, Royal Free; P. V. Crameri, Univ. Coll.; D. P. Crawford, St. Thomas's; D. A. L. Crawshaw, Guy's; Victoria M. Crosse, Royal Free; G. P. Crowden, Univ. Coll.; J. Crowther and J. Cumming, Manchester; R. N. Curnow, St. Bart.'s; R. R. Dalling, Liverpool; H. E. Daniel, Cardiff and St. Bart.'s; R. K. Debenham, Cambridge and London; A. E. De Chazal, Univ. Coll.; J. D. Dillon, St. Bart.'s; W. H. A. Dodd, Liverpool; A. S. M. Douglas, St. George's; J. L. C. Doyle, St. Bart.'s; G. I. Evans, Manchester; P. F. Evans, London, Christabel S. Eyre, Charing Cross; C. R. Fielding, Manchester; F. J. T. Foenander, Middlesex; C. A. Francis, Cambridge and St. Bart.'s; D. B. Fraser, St. Bart.'s; H. E. Gamlen, Durham; A. W. Gardner, St. Bart.'s; J. H. Gibbens, Cambridge and St. Thomas's; G. D. Gillbard, Middlesex; A. Gompertz, Durham; R. T. Goodyear, Cambridge and Liverpool; D. R. Grant, Alberta and Guy's; G. S. Hale, St. Bart.'s; S. Harris, Oxford and St. Thomas's; J. H. Hartland, Birmingham; F. C. Haward, St. Thomas's; Marjorie F. M. Hayward, London; H. L. Heath, Birmingham; Catherine M. Hext, London; H. F. Hiscocks, St. Bart.'s; F. D. M. Hocking, Middlesex; R. G. Hodder, St. Thomas's; H. B. Howell, St. Bart.'s; J. E. Howie, Liverpool; W. Hughes, Middlesex; J. T. Hunter, St. Bart.'s; J. S. Jacobsz, Cape and Guy's; Maurice E. M. Jago, Guy's; L. E. Jones, Cardiff and St. Thomas's; L. R. Jones, Guy's; W. H. M. Jones, Cardiff; B. Kaplansky, Cape and London; P. N. Kapur, Lahore and London; R. St. J. Kemm, Bristol; G. M. King, Cardiff and King's Coll.; J. G. Kingsbury, Guy's; C. K. Lakshmanan, Madras and St. Bart.'s; J. C. C. Langford, St. Bart.'s; Kathleen M. Lankester, Royal Free; G. A. Q. Lennane, Cambridge and St. Thomas's; H. M. O. Lester, St. Thomas's; Muriel A. Lester, Royal Free; T. J. Lloyd, Cardiff; A. McMillan, Birmingham; S. P. Meacock, Cardiff and Guy's; J. G. Milner, Cambridge and St. Bart.'s; V. S. Mitcheson, Cambridge and Birmingham; S. K. Montgomery, Univ. Coll.; A. J. Moody and C. A. Moody, St. Bart.'s; Florence I. R. Moore, Royal Free; W. G. R. Morris, Bristol; C. A. Mulligan, Manchester; Marjorie Murrell, Royal Free; W. Ogden, St. Bart.'s; J. B. Oldham, Liverpool; Dorothy M. Payton, Birmingham; A. P. Pearce, Leeds and London; C. O. Perera, Ceylon; A. Pierce, Birmingham; E. P. Pratt, Durham and St. George's; B. Press, St. Bart.'s; J. Rafalowsky, Zurich and Univ. Coll.; S. Randall, London; Grace D. Rice, St. Mary's; H. S. Rich, Sydney and Middlesex; G. D. Robb, Otago and Middlesex; J. E. C. Rouse, St. George's; A. T. F. Rowley, Bristol; T. A. Seekings, Univ. Coll.; R. Sellick, St. Thomas's; D. G. Shields and J. R. Smith, Cambridge and St. Bart.'s; J. S. Spicket, Cardiff and St. Bart.'s; A. A. Spiro, Manchester; E. F. Stead, London; G. H. Steele, Univ. Coll.; J. S. Symons, London; Catharine F. Taylor, Royal Free; G. Taylor, St. Mary's; Henrietta Trend, Royal Free; Joan W. Urwick, Charing Cross; K. H. Uttley, Cambridge and Univ. Coll.; J. M. van Schalkwyk, Cape and Guy's; Y. S. Wan, Cambridge and St. Bart.'s; E. C. Warner and R. L. Waterfield, Guy's; M. A. Weisman, Manchester; W. S. Whimster, Guy's; R. M. Windeyer, Cambridge and St. Bart.'s; K. K. Wood, Manchester; J. Wood, King's Coll.; H. M. Woodman, Cambridge and King's Coll.; and H. C. Wykerd, Cape and London.

Diplomas in Public Health were conferred, conjointly with the Royal College of Surgeons of England, upon the following candidates:—

J. V. Armstrong, A. Bajaj, Balmokand, E. M. Bergheim, E. R. W. Gilmore, Audrey M. Hughes, J. A. Kerr, J. H. M. Lloyd, Marian Lones, H. L. Oldershaw, Ethel B. Poole, G. Singh, L.-H. D. Thornton, J. G. Walker, and Moreen Whelton.

Diplomas in Tropical Medicine were also conferred upon the following candidates:—

Balmokand, J. N. Banks, A. Blair, J. H. Bowyer, H. H. Brown, E. N. Cook, A. C. Craighead, N. E. Goldsworthy, T. S. Goodwin, P. F. A. Grant, A. N. Haworth, L. H. Henderson, S. Khan, R. A. E. Klaber, K. Lumsden, J. R. Maleri, J. S. E. Manley, A. S. Mohammed, H. J. Moore, J. W. Scharff, E. B. Struthers, and J. L. Stuart.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates were successful in the undermentioned subjects:—

Surgery.—T. A. Lazaro, St. Bart.'s; I. H. Mackay, Sydney; K. E. R. Robertson, St. Mary's; F. Smith (Section 1.), Manchester; and P. W. Tobin, St. Mary's.

Medicine.—E. H. Boodrie and F. Carroll, St. Mary's; T. G. L. Davies, St. George's; C. M. Moody and A. B. Osbourne, St. Mary's; and J. Wilson, Leeds.

Forensic Medicine.—F. Carroll, St. Mary's; P. H. Knowles, Bristol; C. H. Mason and A. B. Osbourne, St. Mary's; and O. W. Percival, Sydney and London.

Midwifery.—R. V. Cookes, B. Horwitz, and T. McD. Kellough, Guy's; P. H. Knowles, Bristol; C. S. Netscher, St. Mary's; W. Irving Pierce, Boston, U.S.A.; S. R. G. Pimm, Guy's; G. E. Rowan, St. Thomas's; B. L. Steele, Univ. Coll.; R. F. Stubbs, Manchester; P. W. Tobin, St. Mary's; and D. Winstanley, Liverpool.

The Diploma of the Society was granted to the following candidates entitling them to practise medicine, surgery, and midwifery: E. H. Boodrie, T. McD. Kellough, C. M. Moody, B. L. Steele, R. F. Stubbs, and J. Wilson.

Dr. J. D. C. White has been appointed Chairman of the Harrow Urban District Council.

UNIVERSITY OF LONDON, UNIVERSITY COLLEGE.—Prof. Elliot Smith will deliver a lecture on the Taungs Skull: Missing Links, at University College, London, on Friday, May 22nd, at 5.30 P.M. The lecture will be illustrated by casts and lantern slides of various "missing links." The proceeds from the sale of tickets will be devoted to the St. Christopher's Working Boys' Club, 39, Fitzroy-square, W., which is largely maintained and organised by the students and staff of University College. A leaflet giving full particulars of the lecture and price of tickets can be obtained by sending a stamped addressed envelope to Miss Husbands, University College, Gower-street, London, W.C. 1.

SIERRA LEONE: SIR ALFRED LEWIS JONES TROPICAL RESEARCH LABORATORY.—In the course of his visit to West Africa, H.R.H. the Prince of Wales, on April 7th, inspected this laboratory, which is a branch of the Liverpool School of Tropical Medicine, and was built after the war out of funds bequeathed by the founder of the School, Sir Alfred Jones. The Prince was received by the director, Prof. B. Blacklock, with Mrs. Blacklock, Dr. Gordon, assistant director, and Dr. Macdonald, research assistant, and showed great interest in work that is being done by the laboratory in the investigation of tropical diseases.

ROYAL INSTITUTION.—The annual meeting of the members was held on May 1st, Sir James Crichton-Browne, treasurer and vice-president, in the chair. The annual report of the Committee of Visitors for the year 1924, testifying to the continued prosperity and efficient management of the institution, was read and adopted. Seventy-eight new members were elected in 1924, and 63 lectures and 19 evening discourses were delivered. The books and pamphlets presented amounted to about 273 volumes, making with 678 volumes (including periodicals bound) purchased by the managers, a total of 951 volumes added to the library in the year. The following were unanimously elected as officers for the ensuing year: President: The Duke of Northumberland; Treasurer: Sir James Crichton-Browne; Secretary: Sir Arthur Keith; Managers: Sir Thomas Barlow, Sir John Biles, Sidney G. Brown, Ernest Clarke, Sir Dugald Clerk, Prof. J. A. Fleming, Earl Iveagh, Sir George Lawson Johnston, Sir Oliver Lodge, Charles H. Merz, Sir Ernest Moon, the Hon. Sir Charles Parsons, Sir Edward Pollock, Sir Robert Robertson, and Sir Almroth Wright; Visitors: K. A. Wolfe Barry, Alfred Carpmael, Edward Dent, William H. Eccles, Viscount Falmouth, Frederick H. Glew, W. E. Lawson Johnston, Alexander G. Low, Ronald Malcolm, Clifford C. Paterson, Sir Walter Peacock, Herbert M. Phipson, Hugh Munro Ross, Frank Coston Taylor, and John Tennant.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—On Tuesday, May 12th, at 5.30 P.M., Mr. J. P. Lockhart-Mummery will lecture for the Fellowship of Medicine in the West Lecture Hall (1, Wimpole-street) on the Diagnosis and Treatment of Internal Piles.—From May 18th to May 29th, Saturday excepted, the London Temperance Hospital will hold a course for the convenience of those in general practice. A clinical demonstration illustrated by cases will be given at 4.30 P.M., lasting for one hour, followed by a short lecture at 5.30 P.M.—The month's course in Psychological Medicine at the Maudsley Hospital began on May 4th, and the demonstrations and lectures embrace all aspects of this particular subject.—The Central London Throat, Nose, and Ear Hospital will begin a three weeks' special course from May 11th to May 30th, consisting of clinical demonstrations with out-patient clinics and ward rounds dealing with cases peculiar to this hospital. An operative surgery class will also be arranged.—From May 18th to the end of the month will be given a special course in Diseases of Infants at the Infants Hospital, consisting of lectures, out-patients' clinics, "round table" consultations, and visits to four different centres away from the hospital.—There will also be a two weeks' course in Dermatology from May 18th at the Hospital for Diseases of the Skin, Blackfriars. Instruction will be given in the out-patient department from 2.30 P.M., with a special demonstration on selected cases on May 19th, together with venereal cliniques twice weekly.—The following courses will take place in June on Diseases of the Chest at the Victoria Park Hospital for Diseases of the Heart and Lungs: Gynæcology at the Chelsea Hospital for Women; Tropical Medicine at the London School of Hygiene and Tropical Medicine; Venereal Disease at the London Lock Hospital; and an intensive course at the London Temperance Hospital and associated hospitals.—Copies of each syllabus of the foregoing courses, together with the programme of work of the Fellowship of Medicine, may be obtained from the Secretary at 1, Wimpole-street, London, W. 1.

MANX HOSPITAL EXTENSION.—The Manx legislature have granted the Douglas Corporation permission to borrow £15,000 to build a new wing to the Mental Hospital.

HONOUR FOR MANCHESTER SURGEON.—Dr. A. G. C. Magian, of Manchester, has received the Palmes d'Officier de l'Instruction Publique for his work in connexion with the Manchester French Hospital and the Entente League.

MEDICO-PSYCHOLOGICAL ASSOCIATION.—A quarterly meeting of the Medico-Psychological Association of Great Britain and Ireland will take place on Thursday, May 21st, at 11, Chandos-street, Cavendish-square, London, W., under the presidency of Dr. M. J. Nolan, at 2.30 P.M., when the Maudsley lecture, entitled "Mind and Brain," will be given by Dr. J. Shaw Bolton.

QUEEN'S UNIVERSITY (BELFAST) CLUB, LONDON.—The third annual dinner of this club will be held in the Connaught Rooms, Great Queen-street, London, W.C., on Thursday, May 21st, at 7.30 for 8 o'clock. Chairman, Major-General Sir Havelock Charles. Members who intend to be present or to introduce guests are requested to give notice to the hon. secretaries, 17, Wimpole-street, W. 1, not later than Monday, May 18th. The charge will be 12*s.* 6*d.* (exclusive of wines).

MEDICAL PRACTICE IN RUSSIA.—The Narkowsdrav (People's Commissariat of Public Health) states that doctors of medicine who have studied abroad and have obtained their diplomas abroad must pass a medical examination at one of the Russian universities in order to be entitled to practise medicine in U.S.S.R. Applications must be sent in to the Narkowsdrav.

CANADIAN HONOUR TO A MEDICAL MAN.—Convocation of McGill University, Montreal, resolved on May 19th to confer the degree of LL.D. on, amongst others, Dr. David McKay Cassidy, medical superintendent of the County Asylum, Lancaster. Dr. Cassidy graduated M.D. and C.M. at McGill in 1866, became L.R.C.S. Edin. in 1867 and F.R.C.S. in 1875, B.Sc. Edin. in 1882 and D.Sc. in Public Health in 1884.

THE LATE DR. WILLIAM WALLERS.—William Wallers, M.R.C.S. Eng., one of the oldest and one of the busiest practitioners in Blackburn, died on April 29th in his sixty-eighth year. A student in the late seventies at what was then the Royal School of Medicine, Manchester—later Owens College Medical School—he qualified M.R.C.S. in 1881, became an assistant house surgeon at Stockport Infirmary, a house surgeon at Manchester Royal Infirmary, and then for three years house surgeon at the Blackburn and East Lancashire Infirmary. Thereafter, 40 years ago he settled in Blackburn, where he was in active practice until overtaken by a severe illness some months back.

ROYAL COMMISSION ON NATIONAL HEALTH INSURANCE.—The twenty-sixth meeting of this Commission was held at the Home Office, Whitehall, on April 30th, Sir Andrew Duncan in the chair. Evidence was given on behalf of the British Medical Association by Dr. R. A. Bolam, chairman of the Council, Dr. H. B. Brackenbury, chairman of the Representative Body, Dr. H. Guy Dain, chairman of the Insurance Acts Committee, Dr. Alfred Cox, medical secretary, and Dr. H. J. Cardale, chairman of the London Panel Committee. The following subjects were dealt with: The quality of the medical service given under the panel system, the conditions to be satisfied by a public service under the Health Insurance Scheme, the range of persons to be included within the scheme, extension of scope of medical service, coördination of existing services, the arguments against a salaried medical service.

MANCHESTER HOSPITAL SATURDAY FUND.—At the eighteenth annual meeting held in Manchester on April 24th it was stated that greater progress had been made during the last year than in the preceding one. The weekly contributions from workpeople amounted to £22,442, as compared with £18,377 in 1923, a matter of congratulation, as trade was still far from normal. The Workpeoples' Convalescent Homes were established in 1907 and from that time to the end of last year the admissions of men and women numbered 20,578. Regular contributors of one penny a week were entitled to a fortnight's stay at the homes to re-establish their health after illness or accident. During the last two years the contributions to the Saturday Fund have increased by almost 100 per cent. Of the £22,000 contributed in pennies £11,841 would be given to the hospitals, as against £9401 in 1923 and £5500 in 1922. Since 1907 the total contributed to the hospitals was £98,000. Out of every penny subscribed more than a halfpenny went to the hospitals, and the balance to the Convalescent Homes Fund. Out of every £1000 the sum of £850 went to the hospitals and £150 to the Convalescent Homes Fund.

Sir Humphry Rolleston, Regius Professor of Physic at the University of Cambridge, has been elected to a Fellowship at St. John's College, Cambridge.

HOVE HOSPITAL.—A public meeting on May 1st, presided over by the mayor (Alderman W. Jago), passed a resolution of thanks to Mr. Bernhard Baron for his generous offer to build and furnish at a cost of £7000 a new wing to this institution; and another resolution appealing to the townspeople to provide the necessary funds for the maintenance of the enlarged building.

CHADWICK PUBLIC LECTURES.—Two lectures, illustrated with epidiascope and lantern slides, will be given by Prof. Emile Brumpt, of the University of Paris, at 5.15 P.M., on May 25th and 29th. The first lecture on How to Conduct an Anti-Malarial Campaign will be delivered in the Barnes Hall, Royal Society of Medicine, 1, Wimpole-street, London, W., Sir William Collins presiding, and will be preceded (at 5 P.M.) by the presentation of the Chadwick gold medal and Royal Air Force prize of £100 to Wing-Commander Harold E. Whittingham, M.B. This award is made upon the nomination of Air-Commodore David Munro, Director of Medical Services, Royal Air Force, who will be present. The second lecture, entitled the Prophylaxis of Sleeping Sickness, will be delivered in the Lecture Room, Royal Society of Arts, John-street, Adelphi, London, W.C., Sir James Crichton-Browne, F.R.S., presiding.

ROYAL COMMISSION ON LUNACY: EVIDENCE OF THE MEDICO-PSYCHOLOGICAL ASSOCIATION.—At the sitting of the Commission on May 4th, a memorandum was submitted by the Medico-Psychological Association of Great Britain and Ireland embodying the views of the Association and containing the following recommendations:—

That "clinics for mental disorders," preferably in connexion with the universities, medical schools, and general hospitals, should be established.

That the reception into mental institutions of patients, whether of the private (hereinafterwards called "paying patients") or of the pauper (hereinafterwards called "rate-aided patients") class, should follow a similar procedure.

That a considerable proportion of admissions to mental institutions should be dealt with on a voluntary basis, so that such voluntary treatment should be extended to the rate-aided class, for which legislative sanction has already established precedents at the Maudsley Hospital and at the City of London Mental Hospital.

That special legal machinery should be devised for treating early non-volitional cases.

That a "provisional order" should be instituted as an intermediary measure before the usual "judicial order" for detention is enforced.

That when such detention is necessary for the cure or care of patients, medical certification should take place as constituting evidence, but that the authority for detention, discharge, and continuation, i.e., renewal, of orders should entail the responsibility of some authorised person not acting in a medical capacity.

That a broader conception should be taken of the functions of both the central and local authorities for "lunacy" or mental health administration.

That the Poor Law authorities should be superseded by the local authorities in regard to the care, treatment, and maintenance of necessitous patients suffering from mental disorders.

The Chairman of the Commission, Mr. H. P. Macmillan, said that they were convinced of the desirability of establishing mental clinics associated with, but separated from, the general hospital, and of treating patients at these clinics without certification. The immediate difficulty was to evolve machinery to carry out this recommendation. An interesting discussion followed on the possibility of voluntary detention.

ROYAL MEDICAL BENEVOLENT FUND.—At the last meeting of the Committee 32 cases were considered and £476 voted to 30 applicants. The following is a summary of some of the cases relieved:—

Widow, aged 72, of L.R.C.P. Edin. who practised in the Isle of Man and died in 1912. Applicant has supported herself, and her daughter up to the time of her marriage, by taking posts as housekeeper. She has just had to give up her last post owing to sudden collapse due to influenza and double pneumonia. Friends have managed to keep her in a nursing home, but the applicant is now back again in her modest lodging and not fully recovered her strength. Her only income is a life interest bringing her in £30 per annum and the post given up was at the rate of £50 per annum. Rent 13s. 6d. a week. Voted £18 in 12 monthly instalments.

Widow, aged 62, of L.S.A. who practised in Cambridgeshire and died in 1923. Applicant has taken a house so as to be able to let rooms and provide for herself and two daughters living at home. Applicant's total income is the rent from a house amounting to £55 per annum, and a daughter, who is a nursery governess, pays the applicant 10s. a week. Rates £20 per annum. Applicant asks for a grant towards 50 guineas per annum for a son, who has been in an institution for mental defectives for seven years. Voted £20 in two instalments.

Widow, aged 47, of M.B. Camb. who practised in Worcestershire and died in 1922. Applicant is left with five children, ages 9 to 17. The three eldest are at boarding school and provided for by friends; the two youngest are with applicant having lessons at home. Applicant lives in her own house and the rates amount to £20 per annum. She has an income of £250 per annum, an allowance from the grandmother of £100. Applicant asks the Fund to help her with votes for Epsom for her youngest boy Geoffrey, aged 9. Committee promised to help in getting votes for the youngest son.

L.R.C.P. & S.I., 1879, aged 74, who practised in London. He gave up practising owing to his wife's ill-health and travelled abroad on his wife's account. She died in 1899. Since then applicant has taken locums and during the war was on sea transport. Received £52 10s. from locums during the last 12 months. Room, breakfast, and supper amounts to £1 a week. Owing to influenza and phlebitis has not been able to pay his landlady, to whom he owes £28. Voted £30.

Wife, aged 40, of L.R.C.P. & S. Edin. who is now in a sanatorium at 4 guineas a week, which is paid by his brother. Applicant wishes to take a house so that her husband can have the benefit of good air after he leaves the sanatorium in a month's time. Local medical practitioners paid the applicant £3 while carrying on her husband's practice. She received £46 from a whist drive, and the only money in hand is £100, which the applicant wishes to reserve towards the house mentioned above. The two eldest children are at the National Children's Home and Orphanage, the two youngest, aged 3½ and 1 year, are with the applicant. Voted £10.

Daughter, aged 56, of M.R.C.S. Eng. who practised in Middlesex and died in 1914. Applicant has rheumatoid arthritis and is in general ill-health. She has not had any special training for business or a profession and is only able to do plain needlework, which brought her in £12. She has £14 per annum from war loan and £5 from the National Benevolent Institution. Rent 3s. a week. Our local secretary for Devon says: "With some money a better room could be got for her than the miserable one she now occupies." Voted £26 in 12 monthly instalments.

Widow, aged 49, of L.R.C.P. Edin. who practised in Lancashire and died in October, 1924. Applicant is left with three children, ages 19, 12, 10, and only £40 per annum from some railway shares. Rent £1 a week for two rooms. The eldest son is a farm pupil and only receives pocket money; the other children are at school. Applicant wishes to sell out her capital and start a business and asks the Fund to help her with the education of her two youngest children until she is established. Voted small grant and referred to the Guild.

Subscriptions may be sent to the Hon. Treasurer, Sir Charters Symonds, at 11, Chandos-street, Cavendish-square, London, W. 1.

Parliamentary Intelligence.

HOUSE OF COMMONS.

WEDNESDAY, APRIL 29TH.

Dried Milk and Infantile Death-rate.

Mr. GROVES asked the Minister of Health whether his attention had been called to the continued reduction in the infantile death-rate within the county borough of West Ham; whether he was aware that these reductions were side by side with the increased supply of dried milk and the general development of the health services of the borough; and whether his department proposed to make any recommendation to the local authorities of the country respecting the use of dried milk in preference to liquid milk.—Sir KINGSLEY WOOD replied: The answer to the first part of the question is in the affirmative. As regards the second part, I may point out that the reduction in recent years in the infantile death-rate in West Ham is comparable with the reduction which has occurred in other similar areas, and my right hon. friend is advised that it cannot be attributed exclusively to any particular measures which have been adopted in this area. The answer to the third part is in the negative. The question of the supply of dried or liquid milk is a matter primarily for the decision of the local authorities, regard being paid to all the relevant circumstances of their districts.

THURSDAY, APRIL 30TH.

Bengal Criminal Law Amendment Act.

Mr. THURTLE asked the Under Secretary of State for India whether it was the intention of the Government now to repeal Bengal Regulation III. of 1818, in view of the fact that the Bengal Criminal Law Amendment Act, 1925, was now part of the criminal law of India.—Earl WINTERTON said: The reply is in the negative.

Government and Opium Agreements.

Sir WALTER DE FRECE asked the Prime Minister whether it was the intention of Great Britain to ratify the protocol reached at the recent Opium Conference at Geneva; and whether he proposed to lay the document before Parliament.—Sir W. JOYNSON-HICKS replied: As has been stated in reply to a previous question by Lady Astor on March 24th, it is the intention of the Government as at present advised to ratify the agreements reached at the recent conferences. I doubt whether it is necessary to incur the expense of printing the documents as a Parliamentary paper at this stage, as they will doubtless be published very shortly by the League of Nations office.

Mr. FORREST asked the Prime Minister whether, in view of the fact that the central board to be established under the last Anti-Opium Conference at Geneva was not likely to come into operation for some time, he would state whether the advisory committee on opium traffic was still in existence; whether it would hold its annual meeting this year, and, if so, when; and what was to be the policy of the British Government in respect of it.—Mr. LOCKER-LAMPSON replied: The advisory committee whose function is to assist and advise the Council of the League in dealing with any question that may arise in connexion with the League's supervision of the drug traffic, and to promote the fullest possible international coöperation in regard to the matter, is still in existence and will, so far as I am aware, continue to exist. I understand a meeting of the committee will be held as usual this year, some time before the meeting of the assembly in September, but the Government has not yet been informed of the date. I am not in a position to make any statement of policy, as the agenda for the meeting has not yet been settled.

Supply of Insulin by Poor-law Authorities.

Colonel DAY asked the Minister of Health if, in view of the reduction in the price of insulin, he could now say whether it was supplied free by all Poor-law authorities on the recommendation of their medical officers.—Mr. N. CHAMBERLAIN replied: I have no reason to suppose that Poor-law authorities are not supplying insulin in all proper cases in which application is made to them and supported by their medical officers.

Royal Commission on National Insurance.

Mr. OAKLEY asked the Minister of Health, in connexion with the Royal Commission on National Health Insurance, if he could give an approximate date when the report of the Commission would be presented to Parliament.—Mr. LOCKER-LAMPSON (Under Secretary for the Home Office) replied: I understand that satisfactory progress is being made with the hearing of evidence by the Royal Commission on National Health Insurance, but I am not in a position to say when their report may be expected.

Education of Defective Children.

Mr. HARRIS asked the President of the Board of Education if he would state the number of urban and rural local education authorities in which no provision existed for the education of defective children.—Lord E. PERCY replied: No certified special schools for defective children of any type exist in the areas of 27 county authorities and 102 non-county authorities. I would, however, remind the hon. Member that the majority of local authorities in whose areas no special schools exist make arrangements for the attendance of defective children at special schools in other areas.

Delays in Medical Board Decisions.

Captain BOWYER asked the Minister of Pensions whether he was aware that in some cases there was undue delay in notifying results of medical boards; and would he take steps to remedy this.—Major G. C. TRYON replied: Under the instructions of the Ministry the decision upon a case following a medical examination is conveyed to the claimant as promptly as possible. In a very few cases, as my hon. and gallant friend will understand, expert opinion or additional evidence may have to be obtained, and some unavoidable delay may occur. I have, however, recently taken active steps to secure that the speediest decision possible is arrived at on all outstanding cases.

MONDAY, MAY 4TH.

Post-mortems in Criminal Cases.

Mr. A. R. KENNEDY asked the Home Secretary whether he was aware of the disadvantage which might attach to a person accused of murder, or manslaughter, in the conduct of his defence arising from the practice of appointing one medical man only to conduct a post-mortem examination; and whether he would take the necessary steps to ensure that, where a person had died in circumstances which might lead to a criminal charge being made against another in connexion with the death and a post-mortem examination was held, a duly qualified medical practitioner should be appointed to watch the examination in the interests of the person, if any, thereafter to be charged.—Mr. LOCKER-LAMPSON replied: My right hon. friend does not see his way to propose legislation for this purpose. A post-mortem examination is not a matter of advocacy, but of scientific investigation. The Director of Public Prosecutions is, however, considering whether it may not be possible to arrange that the defence shall have the opportunity of appointing a medical man to be present on behalf of the defendant when the post-mortem examination is performed.

The Lee Commission Report.

Mr. LANSBURY asked the Under Secretary of State for India whether the Government had given instructions that the terms of the recommendations of the Lee Commission Report were to be extended to European members of the superior central services recruited in India and who had an Asiatic domicile.—Earl WINTERTON replied: I would refer the hon. Member to Statutory Rules and Orders No. 1395 of 1924. The pay and passage recommendations of the Lee Commission Report have been extended to members of the 15 central services which it has been decided to regard as superior in precisely the same way as they have been given to members of the All India Services (other than the Indian Civil Service); that is to say, eligibility for these concessions depends upon an officer having a non-Asiatic domicile. The pension concessions have also been given to the 13 of these 15 services which are pensionable on a rupee basis and for these an officer of Asiatic domicile is eligible.

TUESDAY, MAY 5TH.

Maternity and Child Welfare Services.

Mr. LANSBURY asked the Minister of Health the amount of public money spent by local authorities during the years ending March, 1913, and March, 1925, on child welfare clinics and other centres, and the amount spent on the supply of milk to nursing and expectant mothers during the same period, showing the amount raised from the rates and the amount paid from the national Exchequer.—Sir KINGSLEY WOOD replied: No figures are available as regards maternity and child welfare services in respect of the year ended March, 1913, the year ended March 31st, 1915, being the first year in respect of which Exchequer grant was paid on these services. The total net expenditure of local authorities in England and Wales on all maternity and child welfare services in that year was (approximately) £66,700, and of voluntary agencies receiving Exchequer grant (approximately) £16,200. No separate figures as to the expenditure of local authorities on maternity and child welfare centres and clinics, or on the supply of milk to nursing and expectant mothers and children, are available prior to the year ended March, 1920. For that year the net expenditure was as follows: Maternity and child welfare centres and clinics, £132,379 (exclusive of the cost of medical supervision and services of health visitors, which cannot be given separately in respect of this item). Supply of milk and food to nursing and expectant mothers and children, £163,648. The net expenditure on centres and clinics provided by voluntary agencies receiving Exchequer grant in that year was approximately £102,000. Particulars of the actual expenditure on these services for the year ended March, 1925, are not yet available, but the net expenditure for the year ended March, 1924, was as follows: Maternity and child welfare centres and clinics, £134,340 (exclusive of medical supervision and health visitors' services). Supply of milk and food to nursing and expectant mothers and children, £200,100. Centres and clinics provided by voluntary agencies receiving Exchequer grant (approximately), £105,100. One half of the expenditure referred to above was met by way of Exchequer grant, and one-half of the net expenditure of local authorities was met out of the rates.

Recent Increase in Small-pox Cases.

Sir WILLIAM DAVISON asked the Minister of Health whether his attention had been called to the recent increase in cases of small-pox throughout the country; what was the total number of cases which had been notified during the past three months; and whether he had received any report as to the causes which had brought about the recent increase in such cases.—Sir KINGSLEY WOOD (Parliamentary Secretary to the Ministry of Health) replied: The answer to the first part of the question is in the affirmative. The total number of cases of small-pox notified in England and Wales during the 12 weeks from Jan. 4th to March 28th was 1609. My right hon. friend has received numerous reports made by medical officers of his department who have visited the districts in which small-pox is prevalent, and is advised that the recent increase in the number of cases may be attributed to the neglect of vaccination in many of the invaded districts, and to neglect of the precautions which are essential if the spread of the disease is to be checked. My right hon. friend may perhaps take this opportunity of informing the House and the country that he is advised that there is no doubt that the disease now so prevalent in certain districts is true small-pox, though happily mild in degree, and that vaccination is the only reliable protection against it.

Sir W. DAVISON: Is it a fact that the late Minister of Health made an Order making it easier for people to obtain exemption from vaccination?

Dr. WATTS asked if the hon. gentleman was aware that each of these cases cost the local authority £250 for treat-

ment, isolation, disinfection, and so forth, and if his attention had been drawn to the report of a medical officer of health which proved distinctly that in his area the money they had to spend on these cases could have built 1000 or 1500 houses?

Mr. N. MACLEAN asked if the Government would issue orders to the local authorities to extend the building of houses and the clearing of sites, and to take steps to eliminate this disease by means of fresh air and pure food, and not by vaccination?

No answers were given.

Sir VICTOR WARRENDER asked the Minister of Health if his attention had been drawn to the increase of small-pox in certain areas; and whether the incidence of the disease had been increased since the coming into effect of the present regulations affecting exemption from vaccination.—Sir KINGSLEY WOOD replied: The answer to the first part of the question is in the affirmative. As regards the second part, it is presumed that my hon. friend is referring to the Order issued by the late Minister of Health which had the effect of reversing an Order issued by my right hon. friend on July 20th, 1923, and of reinserting the form of statutory declaration of conscientious objection in the notice of the requirement of vaccination handed to the parent or guardian when the birth of a child is registered. The Order of the late Minister came into force on Oct. 1st last, and my right hon. friend is carefully watching its effect, but there is not yet sufficient evidence to enable him to form a final opinion.

Dr. WATTS: How does the hon. gentleman explain the fact that, despite the number of cases of small-pox, proceedings are rarely, if ever, instituted under the present Vaccination Act?

Sir KINGSLEY WOOD asked for notice of the question.

Lieut.-Colonel FREMANTLE: Are the Government considering the transference of these powers from the boards of guardians to the sanitary authorities, so that they may be worked out in common with the general upkeep of the public health?

No reply was given.

School Children and Infectious Disease.

Colonel DAY asked the Minister of Health if he would consider the introduction of legislation to prevent persons in control of children, as, for example, headmasters and managers of schools, from permitting them when in an infectious condition to enter public vehicles or go into public places at the risk of spreading infection.—Sir KINGSLEY WOOD replied: Provision is already made in Section 126 of the Public Health Act, 1875, for preventing the exposure, without proper precautions, in public places and public conveyances of children suffering from any dangerous infectious disorder. Similar provisions as regards London are contained in Sections 68 and 70 of the Public Health (London) Act, 1891, and there are numerous supplementary provisions on this subject contained in local Acts. The question of introducing further legislation dealing generally with the matter will be considered in connexion with the proposed amendment of the Public Health Acts.

DONATIONS AND BEQUESTS.—By the will of the late Mr. Thomas Hamer, J.P., of The Banks, Upper George-street, Tyldesley, Lancs, the testator left, among other bequests, £1000 to the Manchester Royal Infirmary; £500 each to the Manchester Royal Eye Hospital, Henshaw's Blind Asylum, Manchester, the Southport Convalescent Hospital, the Leigh Infirmary, the Wigan Infirmary, the Bolton Infirmary, the Devonshire Hospital, Buxton, Derbyshire, Dr. Barnardo's Homes, and the National Society for the Prevention of Cruelty to Children; and £250 each to the Royal Society for the Prevention of Cruelty to Animals, the Royal Manchester Children's Hospital, Pendlebury, and the Manchester and Salford Deaf and Dumb Benevolent Association.—Mrs. Mary Eliza Culme-Seymour, of Knightsbridge, S.W., bequeathed £1000 to the Westminster Hospital for a bed to be called the "Robert George Clutton" bed.—Mr. James David Williams, of Styal, Cheshire, a Manchester merchant and shipper, left 100 fully-paid preference shares in the Manchester Ship Canal Company each to the Manchester Royal Infirmary, the Ancoats Hospital and Ardwick and Ancoats Dispensary to endow a J. D. Williams bed, the St. Mary's Hospitals, Manchester, to endow a J. D. Williams bed; 50 such shares to the Crippled Children's Home, Marple, for a J. D. Williams cot; and 50 such shares to Manchester and Salford Boys' and Girls' Refuges and Homes and Children's Aid Society.—The Salford Royal Hospital has received a grant of £1500 and the Salford District Nurses' Home £400 and other hospitals £1310 from the Booth Charities.—Of the total annual receipts of the Samaritan Hospital for Women—viz., £2932—the patients themselves contributed £864.—The Christie Hospital, Manchester, has received £2500 from the executors of the late Mr. Edwin Kershaw, of Bolton.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY, Burlington House, W.

THURSDAY, May 14th.—4.30 P.M. *Papers to be read:* Prof. E. C. C. Baly and Elizabeth Semmens: The Selective Photochemical Action of Polarised Light: I. The Hydrolysis of Starch. R. B. Thomson and H. B. Sifton: Resin Canals in the Spruce (Picea). An Anatomical and Œcological Study and its Bearings on Phylogeny. (Communicated by Dr. D. H. Scott.) H. G. Cannon: On the Segmental Excretory Organs of Certain Freshwater Ostracoda. (Communicated by Prof. E. W. MacBride.) E. G. T. Liddell and J. F. Fulton: Observations on Ipsilateral Contraction and "Inhibitory" Rhythm. (Communicated by Sir Charles Sherrington, P.R.S.) K. Furusawa: Muscular Exercise, Lactic Acid, and the Supply and Utilisation of Oxygen. Part X. The Oxygen Intake during Exercise while Breathing Mixtures Rich in Oxygen. (Communicated by Prof. A. V. Hill.)—*Papers to be read in title only:* J. S. Yeates: The Nucleolus of Tmesipteris Tannensis Bernh. (Communicated by Dr. L. Cockayne.)

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MEETINGS OF SECTIONS.

Wednesday, May 13th.

SUBSECTION OF PROCTOLOGY (Section of Surgery): at 5 P.M.

Annual General Meeting:
Election of Officers and Council.

Discussion on
The Value or Otherwise of X Rays in the Diagnosis of Diseases of the Colon.

Openers:
Dr. Gilbert Scott and Mr. Hamilton Drummond.

Other Speakers:
Dr. W. H. Coldwell, Sir Charles Gordon-Watson, Dr. Arthur Hurst, Mr. J. P. Lockhart-Mummery, Dr. Bertram Shires, Dr. Ulysses Williams, and others.

Annual Dinner:
The Annual Dinner will be held at Oddenino's Restaurant, 60, Regent-street, W., at 8.15 for 8.30 P.M. Price 12*s.* 6*d.*

Thursday, May 14th.

NEUROLOGY: at 5 P.M.

Annual General Meeting:
Election of Officers and Council.
At this meeting pathological specimens illustrating diseases of the nervous system will be shown, and those who wish to show specimens should communicate with the Hon. Secretaries at an early date so that accommodation may be made for their exhibits.

Dinner:
The Meeting will be followed by a Dinner at 7.45 P.M. at the Langham Hotel. Price 12*s.* 6*d.*

PSYCHIATRY: at 5.30 P.M.

Annual General Meeting:
Election of Officers and Council.
N.B.—Please note change of date and time.

TROPICAL DISEASES AND PARASITOLOGY: at 5.30 P.M.

Annual General Meeting:
(1) Election of Officers and Council.
(2) Other Sectional business.
N.B.—No papers will be read and no demonstrations will be given.

Friday, May 15th.

ELECTRO-THERAPEUTICS: at 5 P.M.

Annual General Meeting:
Election of Officers and Council.
The Discussion on High Voltage and Radio-Therapy, adjourned from the March Meeting, will then take place, in which Dr. Finzi and others will take part.

Annual Dinner:
The Annual Dinner will be held the same evening at the Langham Hotel, at 7.30 for 7.45 P.M. Price 10*s.* 6*d.*

ROYAL INSTITUTION, 21, Albemarle-street, W.

MONDAY, May 11th.—5.15 P.M., Prof. J. Barcroft: Effects of Climate on the Circulation (IV.).
FRIDAY.—9 P.M., Prof. C. G. Darwin: Recent Developments in Magnetism.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY, May 11th.—8 P.M., Annual General Meeting. 9 P.M., Sir William Hale-White: Annual Oration. The Medical Career of John Keats. To be followed by a Conversazione.

HARVEIAN SOCIETY OF LONDON.

THURSDAY, May 14th.—4 P.M. (at the Paddington Infirmary, 285, Harrow-road, W.), Clinical Meeting.

BIOCHEMICAL SOCIETY.

MONDAY, May 11th.—(At the Middlesex Hospital, W.), 5 P.M. *Communications:* S. L. Baker: Intrarenal Obstruction Caused by the Products of Hæmolysis. R. W. Scarff: Experimental Atheroma in Rabbits Produced by Cholesterol Feeding. O. Rosenheim and J. C. Drummond: A Delicate Colour Reaction for the Presence of Vitamin A. E. H. Lepper and C. J. Martin: The Influence of Salt Concentrations on the C_H of Buffer Solutions as indicated by the Electrometric and Colorimetric Methods Respectively. H. W. Kinnersley and R. A. Peters: Anti-neuritic Yeast Concentrates. L. Gross and P. Eggleton: A Note on Blood-Sugar Levels in Rats Fed on Complete Diets and Diets Deficient in Vitamin B. T. A. Henry, T. M. Sharp, and H. C. Brown: Bactericidal Action of Some Organic Compounds of Mercury. F. Dickens, E. C. Dodds, and S. Wright: Observations upon the Preparation, Properties, and Standardisation of the Ovarian Hormone.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.

MONDAY, May 11th, to SATURDAY, May 16th.—WEST LECTURE HALL, 1, Wimpole-street. Lecture arranged by the Fellowship of Medicine and open to all members of the medical profession. At 5.30 P.M., Mr. J. P. Lockhart-Mummery: The Diagnosis and Treatment of Internal Piles.—CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C. Special Course in Laryngology, Rhinology, and Otology. Clinical Course daily, morning and afternoon sessions. Operative Surgery Class every morning. These Courses may be taken separately, or combined.—MAUDSLEY HOSPITAL, Denmark-hill, S.E. Course in Psychological Medicine. Lectures on the Psychoneuroses, the Practical Aspect of Mental Deficiency, the Pathology of Mental Diseases, and Demonstrations in Clinical Psychiatry and Clinical Neurology.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, W.

MONDAY, May 11th.—12 noon, Mr. Simmonds: Applied Anatomy. 2 P.M., Mr. Addison: Surgical Wards. 4.15 P.M., Staff Consultation on Cases of Interest.
TUESDAY.—11 A.M., Mr. Endean: Venereal Diseases. 12 noon, Dr. Burrell: Chest Cases. 3 P.M., Dr. Pritchard: Medical Wards.
WEDNESDAY.—11 A.M., Medical Registrar: Medical Wards. 2 P.M., Dr. Burnford: Medical Wards. 2.30 P.M., Mr. Donald Armour: Surgical Wards.
THURSDAY.—10 A.M., Dr. Grainger Stewart: Neurological Dept. 2 P.M., Mr. MacDonald: Genito-Urinary Dept. 4.15 P.M., Sir Henry Simson: Lecture: Meddlesome Midwifery.
FRIDAY.—10.30 A.M. Dr. Dowling: Skin Dept. 12 noon, Surgical Registrar: Surgical Pathology. 2 P.M., Mr. Vlasto: Throat, Nose, and Ear Dept.
SATURDAY.—10 A.M., Dr. Saunders: Medical Diseases of Children. 10 A.M., Mr. Banks-Davis: Operations on Throat, Nose, and Ear.
Daily, 10 A.M. to 6 P.M., Saturdays, 10 A.M. to 1 P.M., In-patients, Out-patients, Operations, Special Departments.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.1.

POST-GRADUATE COURSE: MAY–JUNE, 1925.

CLINICAL LECTURES AND DEMONSTRATIONS.

MONDAY, May 11th.—2 P.M., Out-patient Clinic: Dr. Hinds Howell. 3.30 P.M., Syphilis of Nervous System: Dr. Adie.
TUESDAY, May 12th.—2 P.M., Out-patient Clinic: Dr. Walshe. 3.30 P.M., Subacute Combined Degeneration and Allied Diseases: Dr. Birley.
THURSDAY, May 14th.—2 P.M., Out-patient Clinic: Dr. Kinnier Wilson. 3.30 P.M., Methods of Testing the Eighth Nerve: Mr. Theodore Just.
FRIDAY, May 15th.—2 P.M., Out-patient Clinic: Dr. Gordon Holmes. 3.30 P.M., Demonstration of Re-educational Methods in Exercise Room: Mr. Elmquist

COURSE OF LECTURES AND DEMONSTRATIONS ON THE PATHOLOGY OF THE NERVOUS SYSTEM.

MONDAY, May 11th.—12 noon, The Cerebro-Spinal Fluid. Physiology and Pathology: Dr. J. G. Greenfield.

COURSE OF LECTURES AND DEMONSTRATIONS ON THE ANATOMY AND PHYSIOLOGY OF THE NERVOUS SYSTEM.

MONDAY, May 12th.—12 noon, The Neuron, Conduction of the Nervous Impulse, The Reflex: Dr. Walshe.

Dr. H. J. Macbride will give a COURSE OF EIGHT CLINICAL DEMONSTRATIONS, chiefly on METHODS OF EXAMINATION OF THE NERVOUS SYSTEM, in the Wards at 10 A.M. on Tuesdays and Fridays, if sufficient entries are received. The fee for this Course will be £2 2s. (commencing Tuesday, May 19th).

Mr. Armour and Mr. Sargent operate at the Hospital on Tuesday and Friday mornings at 9 A.M., or at such other times as may be announced.

Any part of the Course may be taken separately. Special arrangements will be made for those unable to take the whole Course.

Fees should be paid to the Secretary of the Hospital at the Office on entering for the Course.

J. G. GREENFIELD, Dean of Medical School.

UNIVERSITY OF LONDON ADVANCED LECTURE IN NEUROLOGY.

FRIDAY, May 15th.—5 P.M. (at Charing Cross Hospital Medical School), Prof. B. Brouwer (Amsterdam): The Projection of the Retina in the Brain.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY, May 14th.—4 P.M., Mr. Barrington-Ward: Glands in the Neck.

INSTITUTE OF PATHOLOGY AND RESEARCH, ST. MARY'S HOSPITAL.

THURSDAY, May 14th.—5 P.M., Mr. A. T. Glenny: The Principles of Immunity as Illustrated by Protective Inoculation against Diphtheria.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, Leicester-square, W.C.

TUESDAY, May 12th.—5 P.M., Dr. Barber: Scleroderma.
THURSDAY.—5 P.M., Dr. MacLeod: Tuberculosis Cutis.

UNIVERSITY OF LIVERPOOL POST-GRADUATE LECTURES. (At 3.30 P.M.)

TUESDAY, May 12th.—(At the Southern Hospital.) Mr. T. L. de Courcy: Treatment of Common Eye Disorders.
WEDNESDAY.—(At the Northern Hospital.) Mr. Simpson: Surgical Cases.
FRIDAY.—(At the Royal Infirmary.) Mr. Kennon: Surgical Cases.

MANCHESTER ROYAL INFIRMARY.

TUESDAY, May 12th.—4.15 P.M., Mr. W. H. Hey: Indications for Surgical Intervention in Chronic Abdominal Disease.
FRIDAY.—4.15 P.M., Dr. D. E. Core and Mr. H. H. Rayner: Demonstration of Cases.

MANCHESTER BABIES' HOSPITAL, Burnage-lane, Levenshulme Post-Graduate Lectures.

FRIDAY, May 15th.—8 P.M., Miss Herzfeld: Hernia in Infants.

Appointments.

GROUT, JOHN LEWIS, F.R.C.S. Edin., L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Radiologist and Physician in Charge of the Electro-Therapeutic Department at the Sheffield Royal Hospital.

OLIVER, O. H. D., L.R.C.P. & S. Edin., L.R.F.P.S. Glasg., Certifying Surgeon under the Factory and Workshop Acts for the Coxhoe District of the County of Durham.

SMITH, H. G., M.D., B.S. Lond., D.P.H. Camb., Medical Officer of Health for Lincoln.

WHITE, CLIFFORD, M.D., F.R.C.P. Lond., F.R.C.S. Eng., Obstetric Physician to University College Hospital.

Paddington Green Children's Hospital: STOBO, A. J. H., M.B., Ch.M. Sydney, House Physician; MORTON, R., M.B., Ch.B. Edin., House Surgeon.

Queen Charlotte's Maternity Hospital: ROBERTS, C. H., F.R.C.P. Lond., F.R.C.S. Eng., Consulting Obstetric Surgeon; PHILLIPS, L. G., M.S., M.B. Lond., F.R.C.S. Eng., Obstetric Surgeon to In-patients; WILSON, C. M., M.D., F.R.C.P. Lond., Physician; and WILLIAMS, L. H. W., M.D., M.S. Lond., F.R.C.S. Eng., Obstetric Surgeon to Out-patients.

Vacancies.

For further information refer to the advertisement columns.

Barnsley, Beckett Hospital and Dispensary.—Jun. H.S. £140.
Bedford County Hospital.—Asst. H.S. £130.
Birmingham General Dispensary.—Res. Holiday Locum, 9 guineas weekly.
Cancer Hospital, Fulham-road, S.W.—H.S. at rate of £100.
Cardiff Royal Infirmary.—Res. Reg. and Anæsthetist. £100.
Carmarthen, Joint Counties Mental Hospital.—Asst. M.O. at rate of £350.
Coventry and Warwickshire Hospital, Coventry.—Two Hon. Asst. S.'s.
Darlington County Borough.—Asst. M.O.H. £750.
Dreadnought Hospital, Greenwich.—Anæsthetist. 50 guineas.
Durham County Council, Education Dept.—Asst. School Oculist, £600. Also Asst. School M.O. £600.
East London Hospital for Children, &c.—Morning Cas. O. at rate of £120. Also Anæsthetist. £50.
Elizabeth Garrett Anderson Hospital, Euston-road, N.W.—H.P., Obstet. Asst., and two H.S.'s. Each at rate of £50.
Kensington Tuberculosis Dispensary, 119, Ladbroke-grove, W.—Temp. Tub. Officer for one month. 35 guineas.
Lanark County.—Bacteriologist and Pathologist. £750.
Leicester City Education Committee.—Asst. Sch. M.O. £600.
London Temperance Hospital, Hampstead-road, N.W.—Res. M.O. at rate of £175.
Maidstone, Kent County Ophthalmic Hospital, &c.—H.S. £300.
Manchester City.—Female M.O. £632 7s. 8d.
Manchester, East Lancashire Homes for Disabled Sailors and Soldiers, Broughton House, Park-lane, Kersal.—Res. Med. Supt. £400.
Manchester Royal Infirmary.—Dickinson Research Travelling Scholarship in Medicine. £300. Also Res. Surg. O. £200.
Manchester, St. Mary's Hospitals.—Hon. Asst. S.
Metropolitan Hospital, Kingsland-road, E.—Surg. for Diseases of Women. Also Asst. P.
Middlesex County Council.—Deputy County M.O.H. at rate of £900.

Middlesex Hospital, W.—P. and Asst. P.
Newcastle-upon-Tyne, Princess Mary Maternity Hospital.—Asst. Res. M.O. at rate of £40.
Paddington Metropolitan Borough.—M.O.H. £1000.
Patna, India, Medical College.—Prof. of Pharmacology, Prof. of Anatomy, and Prof. of Physiology. Each Rs.1200 per mensem.
Royal Northern Hospital, Holloway, N.—P., Two Asst. Dent. S.'s. Also Obstet. S.
Salford Union Infirmary, Hope, Pendleton, near Manchester.—Asst. Res. M.O. at rate of £275.
Sheffield Royal Infirmary.—H.P. £80.
Shrewsbury Borough.—M.O.H., &c. £800.
Stockport Infirmary.—Third Res. H.S. £175.
Truro, Royal Cornwall Infirmary.—H.S. £170.
West Middlesex Hospital, Isleworth.—Asst. Med. Supt. £250.
Winchester, Hampshire County Council.—Asst. M.O.H. £600.
York Dispensary.—Res. M.O. £175.

Births, Marriages, and Deaths.

BIRTHS.

CROCKFORD.—On April 29th, at Terrace Lodge, Axminster, Devon, the wife of A. L. Crockford, M.C., M.B., of a daughter.
FERGUSSON.—On April 29th, at Albert-terrace, Edinburgh, the wife of Dr. A. E. Fergusson, Westcliff-on-Sea, of a son.
POPHAM.—On April 28th, at a nursing home, Harrogate, the wife of Captain Cyril Popham, R.A.M.C., of a son.
RITCHIE.—on April 27th, at Whiteholme, Northwood, Middlesex, the wife of Dr. Douglas Ritchie, of a son.
WAKELY.—On April 27th, at Delmynden, Carshalton, the wife of Dr. A. S. Wakely, of a son.

MARRIAGES.

GIBSON—BEAVER.—On April 30th, at St. Stephen's, Bournemouth, Herbert Robert Burnett Gibson, Major, I.M.S., to Ellen Cromwell Beaver, daughter of the late Milton Stuart, of Liverpool, and widow of Arnold Atwood Beaver, late of Heather Lodge, Bournemouth.
MACBRIDE—ORR.—On April 28th, at Hillhead Parish Church, Glasgow, Henry John Macbride, M.D., of Harley-street, London, to Jean Alexandra, younger daughter of Mr. and Mrs. P. Hunter Orr, Belhaven-crescent, Glasgow.
SHERIDAN—HARRIS.—On April 16th, at Brompton Oratory, Captain Bertrand C. O. Sheridan, M.C., R.A.M.C. to Vera, younger daughter of Mr. and Mrs. T. P. Harris, of Hillfields, Pedmore, Worcestershire.

DEATHS.

AMOS.—On April 27th, at Geneva, Samuel Edward Amos, M.R.C.S., L.R.C.P., of Gazley, Ventnor, I.W., in his 40th year.
WILLIAMS.—On April 24th, at "Hagren," Penyffordd, near Chester, after a short illness, Thomas Gee Williams, M.B., in his 40th year.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

MANCHESTER WAR MEMORIAL BEDS AND COTS.—The War Memorial Committee have an unspent balance of £4082 from the £10,572 subscribed for the war memorial in St. Peter's-square, which cost only £6490. It was agreed that it would be carrying out the spirit which prompted the response if beds were endowed for the use of dependants of soldiers and sailors who fell in the war. The Lord Mayor was authorised to arrange for the endowment of two beds at the Royal Infirmary, and one cot and one bed at the Ancoats Hospital, and a cot at the Royal Manchester Children's Hospital at Pendlebury. When the beds are not required for the specific purpose they may be used as the authorities shall determine. The beds and cots will be called the Manchester War Memorial bed or cot as the case may be.

"BAKERS' ITCH": COMPENSATION CASE. — At Hanley County Court on April 24th, Judge Ruegg, K.C., delivered a reserved judgment of importance to employers and workers under the Compensation Act. A baker, Thomas Starkey, of Stoke-on-Trent, sought compensation from his employers, Messrs. Clayton and Sons, bakers, of Loughton, on the ground that he had contracted "bakers' itch" while in their employ. The judge said it was admitted that Starkey had fully recovered, but the applicant submitted that the moment he went back to work the disease would recur. The judge decided that he could not give a workman compensation in respect of a disease from which he was not suffering, although the disease might immediately recur if the workman resumed his old employment. It was an extraordinary difficult question to consider, the judge remarking that if he awarded compensation it would be compensation for life. The Act never intended that, and he added that if the man did return to baking and the disease recurred, that would be a new accident, which, if proved, would entitle him to compensation. It was intimated there would be an appeal.

Notes, Comments, and Abstracts.

THE TREND OF MODERN HYGIENE.*

BY ANDREW BALFOUR, C.B., C.M.G., M.D., F.R.C.P. EDIN., D.P.H. CAMB.

THE trend of modern hygiene or the modern trend of hygiene—which is the better title? It is a moot point, but, after due consideration, I decided to employ the former for the following reason. While one must admit that, almost from the beginning of time, or at least from the beginning of human history, certain general hygienic principles have remained unchanged, and while one must also agree that much of our latter-day hygiene is a reversion to the practice of the Ancients, yet of late years such a remarkable and far-reaching change has come over both the spirit of our dreams and our actual undertakings that we may, with some justice, assert that a new hygiene has been developed, a modern health campaign possessing features which entitle it to be classed as a distinct entity.

[Dr. Balfour then briefly outlined the practice of hygiene throughout the ages, from the days of the ancient Hebrews to the time when a sanitary conscience began to develop in this country, through the labours of such pioneers as Howard, Pringle, Monro, Lind, Trotter, Shaftesbury, Chadwick, Simon, Southwood Smith, and Snow. These men, he said, found Augean stables to be cleansed, and gradually, as order took the place of chaos, as cleanliness replaced dirt, as the work of the laboratory came to be applied to every-day life, as there was more time for thinking and observation, it became evident that, despite all the progress, there yet remained new worlds to conquer. Thus modern hygiene was born. He continued:]

Education of the Public.

The most important item in the public health campaign is, beyond all doubt, education; not so much education of the medical student, the medical man, the dental surgeon, the veterinarian, or the sanitary inspector, as education of the lay public. It sounds simple, but in reality is beset with many difficulties, and perhaps the chief obstacle which lies in the way is the innate selfishness which seems to pervade such a large section of the community on these matters. It must be remembered, however, that sufficient time has not yet elapsed for the effects of the new hygiene to be generally apparent. Striking results have been obtained and are being obtained, but it will take at least a generation before any great and universal effect will be visible, and our modern activities have not been in full swing for five-and-twenty years.

A gratifying feature of the educational campaign is the number of voluntary agencies striving to impart knowledge and to popularise scientific endeavour as applied to the public health. No less than 23 of these embassies of health, as perhaps we may call them, all operating from London, are listed by Sir George Newman in his important memorandum on Public Education in Health, and there are others scattered about the country. They are concerned with various lines of activity and, doubtless, accomplish much good work, but the tendency nowadays is to make health departments responsible for the dissemination of information. This is a duty which, of course, has been shouldered by the Ministry of Health in this country, and which has also been undertaken by the health departments of various municipalities, as witness the legends which now appear on lamp-posts and the posters and pamphlets which warn and guide the citizen.

Dr. Dru Drury, speaking on public health in his address at the Nineteenth South African Medical Congress, says: "We must learn to think so naturally, as members of a community, that we shall feel at least as much self-reproach in publishing rotten books or spreading infection in a school, in spoiling a landscape with refuse, or wasting water, in overworking servants or driving with an open exhaust, as we do now in eating peas with a knife or dropping aitches."

Periodic Medical Examination.

The question of life insurance brings to mind quite another kind of education and a new trend of hygiene. Human nature being what it is, a considerable section of mankind is more influenced by what we may call financial education than by any other means. Demonstrate material monetary benefits resulting from hygienic measures and you may carry the day. Life insurance companies have of late years realised this cardinal fact, and some of them now operate, as Dr. Otto May has pointed out, in three ways. At least, certain of the American companies do. Here we are more

* Abstract of a paper read before the Royal Society of Arts on April 29th, 1925.

conservative and cautious, while, of course, National Health Insurance has been established in this country and, to some extent, proceeds along the lines which a company like the Metropolitan Life Assurance of New York has followed. Some of the advisory medical officers to British companies, including Dr. May himself, are not yet convinced of the utility of all the American undertakings. These latter are of a tripartite nature and may be listed shortly as propaganda, the endowment of research, and individual case treatment. The last named connotes periodical medical examination of policy-holders.

The first two are beyond criticism, but the success of the third is imperilled, partly because it is difficult and expensive to establish a really effective diagnostic service, and partly because a lack of interest is apparent amongst policy-holders. They submit to a first examination impressed, perhaps, by its novelty, but few present themselves for a second and still fewer for subsequent overhauls. Hence, Dr. May and others believe that in this country insurance companies had better confine themselves to supporting voluntary health organisations. It would seem that the time is not yet ripe for the above-mentioned development, although it was suggested in England by Dr. Dobell as long ago as 1870. There is always a pioneer in matters hygienic, a John the Baptist, and in this question of periodic physical examinations Dobell played a part like that filled by Robson in connexion with the control of venereal diseases. Both were like voices crying in the wilderness.

That such a consummation is highly desirable, that it may have far-reaching results, and that it should react on the health of the community, is emphasised in a typical American manner by Dr. John Dill Robertson, of Chicago. He does not hesitate to charge the general practitioner with criminal negligence, hoping that his message will prove so irritating that it will stimulate him to a sense of his responsibilities as a guardian of the public health in his own special direction. According to Robertson, who, of course, merely voices in rather a strident tone the views of others, the true function of the private practitioner is not to cure the sick, but so to advise his patients, or, rather, his clients, that they will remain in good health. Away back in 1907 the same argument was advanced as forcibly by Dr. John McVail in a memorandum accompanying his report on Poor-law Medical Relief in England and Wales. In a recent address he developed his theme and indicated seven directions in which the family physician might be of service as a valuable ally of the medical officer of health.

The Ideal Family Doctor.

I cannot here quote him in full, but he deals with the doctor as a historian, an inquirer into family history, and as an observer and checker of tendencies towards general disease. Let it be noted that amongst the diseases mentioned figure obesity and alcoholism. He envisages the physician as a health guardian of the child, a watchful attendant both of mind and body, a corrector and remover of defects, an adviser to the parents. He traces the extension of this medical care to the youth and the maiden, when the practitioner should guide as to work and athletics and be upon the qui vive to remedy faulty tendencies of all kinds at the threshold of adult life. He pictures him as the friend and confidant of the woman, saving her from the special troubles besetting her sex, and watching the adult man, to see that he does not develop some trade disease, strain his heart, or damage his respiratory organs. In addition, he speaks of general examinations like those for which Dr. Robertson pleads, and he figures the doctor as a prop for old age trying to ward off apoplexy and stay the morbid processes which too often make the evening of life a tragic misery. Dr. McVail is careful to point out that the doctor can only assume such a rôle with the consent of the individual—the adult for himself, the parent for the children.

A specific application of this fine ideal, an ideal which, as we will see, requires certain developments or ever it can come to maturity, is seen in the investigation of "golf hazards," by Dr. Lieb, who, startled by the occurrence of sudden deaths upon the links, collected data which he incorporated in a paper published by the *New York State Journal of Medicine*. Dr. Lieb found that in every case organic disease was present, and that the golfing was only an accessory factor. The important point, however, is that, had those who perished undergone periodical physical examinations and had ordered their lives in accordance with the findings, they need not have died.

Faults in Medical Education.

Now while, presumably, the majority of medical men at the present time could be trusted to give a sound opinion on the middle-aged golfer, it is by no means so certain that they could adequately fulfil the duties listed by Dr. McVail. They have been reared, be it remembered, in an atmosphere of curative medicine, and they have not been trained to look for the beginnings of disease. Of course, amongst them there may be a few James Mackenzies with the seeing eye and the understanding heart, but, taken as a whole, the general practitioner is a patcher, not a preventer. That is not his fault. In the past his training has been defective.

For one thing, he has struggled through a series of more or less water-tight compartments. There has been little linking up of his early scientific knowledge with his later medical and surgical studies, and, if he is to act effectively, his medicine and surgery must be leavened with a leaven wherein physics, chemistry, biology, anatomy, and physiology are combined as ingredients, together with sympathy and common-sense. For another, the doctor, as a student, has been so crammed that too often one mass of ill-digested facts has, throughout the curriculum, crowded out another in process of assimilation, and the only wonder is that he has emerged sane and sound and with a modicum of useful knowledge. For yet another, the preventive aspects of his life's work have not been explained to him, and the vast possibilities which lie before him are too often as a sealed book.

Now all this is changing. The beginnings of that change are recounted in the masterly treatise by our distinguished chairman, his memorandum entitled "Recent Advances in Medical Education in England," or, as he might have written, "Great Britain," for he cites Scotland again and again, and the old Alma Mater which I had the honour to share with him. Sir George Newman and others have remembered what happens when the blind have blind leaders, and by degrees a new type of doctor should be evolved, who, it is to be hoped, will combine the acumen of the old clinical observer with the broad outlook of the sane scientist.

What We Eat and Drink.

One of the most significant happenings in the modern health campaign is the attention paid, not only to dietetics, but to food preservatives and to the handling of food-stuffs. The layman, I fear, must be a little bewildered by all that is said and written about diet. Screed succeeds screed on vitamins. Here an authority thunders against butchers' meat and starchy foods, there an oracle condemns milk for adults. We read of human cesspools. We are told that our faulty food habits explain the increase of cancer. At times one wonders how the human race has managed to survive at all, and exclaims with Pontius Pilate, "What is Truth?" And yet we are progressing, for we are beginning to understand the relation of diet to endocrine secretion and we are correcting errors into which we have drifted through non-adaptation to our complex surroundings, through failure to understand that what the primitive man can do with impunity the civilised man, or at least the town-dweller, does at his peril. The truth really lies in moderation, for, in a phrase I once coined and which perhaps will bear repetition, it is still the case that many folk by their copious libations wash themselves into graves which they have dug with their own teeth. Copious libations do not signify wholly, or even mainly, the imbibition of alcoholic beverages, for a vast deal of digestive trouble is brought about by excess in tea and coffee drinking, and by the swilling of liquid, frequently in effervescing form, during meals. Most of us after middle-age eat far more than we require. War experience should have taught us a salutary lesson, but, like other lessons, it has been forgotten.

I am inclined to think that eventually the chief value of the scientific tirade on foods and feeding will be found to lie in the fact that it will teach some sections of the most important class of the community—the workers—how to live cheaply as well as healthily, how to get the best food value for money spent. This in itself is a great matter, for the waste at present is enormous. Remember, however, there are many poor housewives who, on the practical side, could give the scientist points.

Coöperation in Hygiene.

We have seen how voluntary organisations coöperate with official agencies, how health authorities should coöperate with the lay press, how insurance companies try to coöperate with their policy-holders, how the doctor must coöperate with his clients, and we might also have considered the coöperation of the employer with the employed, but perhaps the most significant trend in modern hygiene is that international coöperation which has sprung into being since men ceased slaughtering each other. True, there was international coöperation prior to the Great War—quarantine is an old story—but there has never previously been a union of peoples on a large scale, not solely for the purpose of safeguarding themselves from the ravages of disease, but with the avowed intention of stamping out disease, wherever found, and of spreading light and learning. It is a fine conception, and is seen in its highest development at Geneva, where the Health Section of the League of Nations is engaged upon its beneficent and widespread work, and in the foreign operations of the International Health Board of the Rockefeller Foundation, for these, though of American origin, depend upon collaboration with other nations.

There is much to be learned from international coöperation, for, after all, the British Empire is a congeries of nations and, apart from any other consideration, anything which serves to bind them more closely in bonds of amity is not only desirable but essential. Surely health considerations should be as potent a tie as financial links! At any rate, they are less mundane and more altruistic.

Black Spots of Empire.

We do not deserve to own some parts of our possessions, for at the present moment, from a hygienic standpoint, they are a disgrace to the British flag. I have no hesitation in saying that the Americans are justified in the feelings with which they view most of the British West Indies, and that the Dutch are more than justified in looking upon some of our hygienic efforts in the Far East with a kind of pitying contempt. Is this a fitting position for the Empire which bred a Simon, a Chadwick, a Patrick Manson? Let us not underestimate the difficulties, let us not overlook how much has been accomplished, above all, let us take into consideration what is now being done and be thankful that there is much to our credit; but, at the same time, as we cannot now lead in the coöperation movement, let us imitate it and improve upon it within the confines of the Empire. Is it not significant that on the other side of the Atlantic a Pan-American Sanitary Code has been formulated to which no less than 18 nations are now adherents?

The conditions in a country like India are such that I sometimes think it would be well if the practice of hygiene there and in some other lands assumed the aspect of religious exercises. There are many forms of worship inferior to that of the goddess Hygeia, and if only the devotions could be adapted to the mentality and habits of the people, I believe more benefit would accrue than from all the efforts now made.

In Africa the case is rather different, and at the present time a great effort is being made to educate the African along sound lines. The trend is towards creating native hygienists who will be able to aid in the sanitary salvation of the Dark Continent. I have no doubt, from what I have seen, that this is capable of accomplishment, though it will take time and money. What the Americans call "visual education" is badly needed, and whether this be accomplished by the cinematograph, by diagrams and models in the schools, or by the establishment of graphic museums, care should be taken that it is not neglected in any scheme for native training.

The Future.

Lastly, both at home and abroad, stress should be laid on the financial aspect of public health work, and the ultimate aim of the hygienist should be clearly and definitely stated. The monetary value of sanitary endeavour is a very tangible thing, and statistics are now available regarding many lines of health work which are most impressive and should convince all save the cranks and the wilfully ignorant. Thus, taking industry, which is so closely related to finance, we know, beyond all manner of doubt, that attention to mental hygiene in factories and workshops promotes harmony and leads directly to a larger output.

A hopeful sign is that there is much enthusiasm and no little idealism in public health circles, and, so long as these are well regulated, they cannot fail of their effect. Yet it is wise to bear ever in mind the dictum of Rienzi and the wisdom of Adam Smith. Rienzi wrote: "The prudent man may direct a state, but it is the enthusiast who regenerates it or ruins," while Adam Smith, in his "Wealth of Nations," before the dawn of the so-called scientific era, declared: "Science is the great antidote to the poison of enthusiasm and superstition."

MICROSCOPY OF THE LIVING EYE.

WE have previously had occasion to refer to recent methods of examining the structure of the living eyes under high magnification with the aid of illumination from the slit-lamp. To get full value from the apparatus it is necessary to serve an apprenticeship in its employment, just as it is necessary for the medical student to learn the use of the ophthalmoscope. For the last few years Prof. Alfred Vogt, of Basle, has conducted classes each summer, which have been attended by ophthalmologists from all over Europe. We now hear that Mr. Basil Graves, who has devoted much time to this subject at hospitals in London, is conducting similar classes in America under the auspices of the Graduate School of Medicine of the University of Pennsylvania. The ophthalmologists who attend these courses are divided into groups of six or nine and each course consists of ten lectures followed by practice with the instrument. This invitation to Mr. Graves was originally for three months, but has been extended to six. It looks as though American ophthalmologists were preparing to take the lead in the discoveries which some slit-lamp enthusiasts anticipate.

CHRONIC ULCERATIVE STOMATITIS.

To the Editor of THE LANCET.

SIR,—In reply to Dr. Meadows (THE LANCET, April 18th) my experience has been that these cases yield readily to dieting. It is necessary to interdict sugar in any form, and also to limit the quantity of fats taken. I allow butter to be taken freely, but no fat of meat, no bacon, no cream, and no milk as a beverage, although the latter may be taken in tea or coffee. Plenty of fresh butcher's meat should be taken with potato and green vegetables, but no fruit, and, of course, no sweet puddings or pastry. Fish and eggs are also suitable. I have not found any medicine of much service, and for local treatment I prefer nitrate of silver applied daily to the ulcers until they are nearly healed.

I am, Sir, yours faithfully,
A. LESTOCK REID.

Brook-street, W., April 22nd, 1925.

DISSEMINATION OF GERMS.

To the Editor of THE LANCET.

SIR,—It seems to me, and has done so for years past, that this subject is one for widespread propaganda by the Ministry of Health. Within my memory spitting in public places has been abolished. Why not this equally objectionable habit? The exhibition of your excellent picture (THE LANCET, April 25th, p. 904) on all trams, trains, and omnibuses would doubtless cost money. But how much illness, unhappiness, and working capacity would it not save? If all medical men, including medical officers of health, would do as I intend to do, and have copies of your article and picture printed and circulated amongst their patients, much good would result I am convinced.

I am, SIR, yours faithfully,
May 2nd, 1925. M.D., B.S.

THE GOAT.

THE keeping of goats is looked upon by some as a hygienic duty, even more than as a profitable hobby, for goats are highly resistant to tubercle. No statistics are available for the British Isles, but in Holland, where goats are not kept under the best conditions, during 1911–20 out of a total of 59,188 animals slaughtered only 54 were found to be suffering from tuberculosis. The milk of the goat is rich in protein and fat and, as Dr. B. D. Z. Wright points out in the British Goat Society's Year Book,[1] is tolerated by some children who cannot take cow's milk. There is also less chance of fæcal contamination of the milk. The Year Book contains a number of very practical articles on goat-keeping, and a good case is made out for improving the goat's position in the agricultural life of the country.

THE "VIC" TONIC FACE CLOTH.

WE have received from Messrs. Grout and Co., Norwich, a face cloth, loofah-like in texture, which should be a useful toilette adjunct; the friction to the skin on its employment is delicate, while the softness of the fabric makes the smallest folds accessible. When soaped it does not get slimy, a fault with many face cloths, and its small size is an advantage to the traveller. Each cloth is wrapped in a sealed envelope and is sold at the price of 1*s*.

A DANGEROUS DEVICE WITHDRAWN.

WE are informed that owing to protests made on behalf of the medical profession the device—a sponge designed for insertion into the vagina during menstruation—to whose dangers we drew attention in THE LANCET of April 18th, has been withdrawn from sale, and remittances for purchase already sent are being returned. This public-spirited action on the part of the company responsible for its manufacture deserves praise.

SHAVALLO.

THIS is a shaving soap prepared by Messrs. J. Knight and Co., Ltd., Royal Primrose Soap Works, Silvertown, E., which has many of the properties which careful shavers look for; it is bland, makes a good lather and is pleasantly scented. The preparation is supplied in a convenient little celluloid case from which it should not be removed, as the roll of soap can be moved up and down within the case by pressure from the bottom.

Enquirer.—We understand that Vitaglass, made by Mr. Lamplough, 47, Victoria-road, King's Norton, is transparent to ultra-violet rays as short as wave-length 275$\mu\mu$. This is rolled cathedral glass suitable for veranda roofs, shelters, skylights, and upper parts of windows. It is hoped to use it for bulbs of tungsten filament lamps which might then be employed as mild sources of ultra-violet rays. As sheet glass the cost is 3*s*. to 4*s*. a square foot.

[1] The British Goat Society's Year Book for 1925. Compiled and issued by the hon. secretary, Thomas W. Palmer, 10, Lloyd's-avenue, London, E.C.2. Pp. 179. 1*s*. 6*d*.